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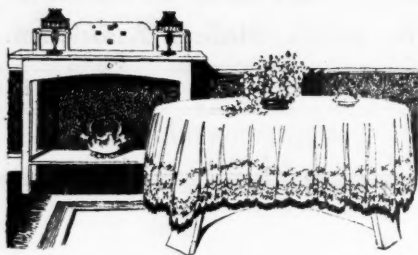
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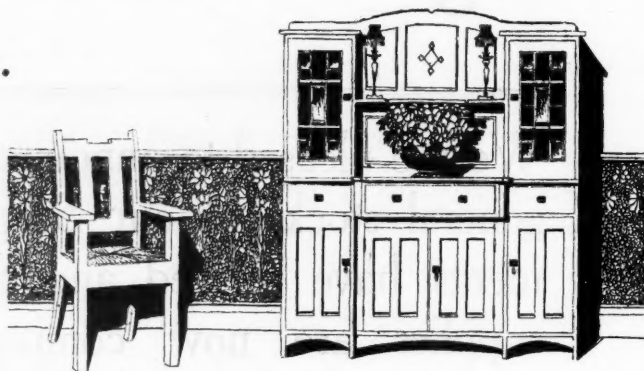


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## Table of Contents

	PAGE.		PAGE.	
<b>ORIGINAL ARTICLES—</b>		<b>THE WEEW—</b>		
Subacute Bacterial Endocarditis, by D. M. McWhae, C.M.G., C.B.E., M.D., M.R.C.P. . . . .	393	The Nature of Anaphylaxis . . . . .	408	
Mr. Pepys, by C. MacLaurin, M.B., C.M., F.R.C.S.E. . . . .	395	Authors and Sufferers . . . . .	409	
A Simple Operative Method of Reducing Obstinate Malposition in Colles's Fracture and in Supra-Condylar Fractures of the Humerus, by C. E. Corlette, M.D., Ch.M. . . . .	397	The Zoological Position of Man . . . . .	409	
Note on the Finding of <i>Anchylostoma Duodenale</i> in the Intestines of the Pig, by John Legg, B.Sc., B.V.Sc., M.R.C.V.S.; and J. A. Rheuben . . . . .	398	<b>ABSTRACTS FROM CURRENT MEDICAL LITERATURE—</b>		
Reminiscences of the Plague, by E. H. Binney, M.B., Ch.M. . . . .	398	Orthopaedic Surgery . . . . .	410	
<b>REPORTS OF CASES—</b>		Morphology . . . . .	411	
A Rare Type of Intra-Cranial Tumour, by T. H. R. Mathewson, M.B., Ch.B. . . . .	400	<b>BRITISH MEDICAL ASSOCIATION NEWS—</b>		
Pathological Report, by Oliver Latham, M.B. . . . .	402	Scientific . . . . .	412	
Imperforate Hymen, by John Allan, M.B., B.S. . . . .	402	Medico-Political . . . . .	412	
<b>REVIEWS—</b>		Nominations and Elections . . . . .	413	
Surgery . . . . .	403	Notices to Members . . . . .	413	
Strabismus . . . . .	404	<b>MEDICAL SOCIETIES—</b>		
<b>NOTES ON BOOKS—</b>		Melbourne Pædiatric Society . . . . .	413	
Bush Flower Fancies . . . . .	404	<b>PUBLIC HEALTH—</b>		
<b>MEDICAL MATTERS IN PARLIAMENT—</b>		The Plague Outbreak . . . . .	416	
Milk Supply . . . . .	404	International and Other Congresses . . . . .	417	
Hospitals for the Insane . . . . .	404	<b>CORRESPONDENCE—</b>		
<b>LEADING ARTICLES—</b>		Surgical Treatment of Enteric Fever . . . . .	417	
The Spreading Epidemic . . . . .	405	The Prevention of Diphtheria . . . . .	417	
Internationalizing Medicine . . . . .	406	<b>BOOKS RECEIVED . . . . .</b>		418
		<b>MEDICAL APPOINTMENTS . . . . .</b>		418
		<b>MEDICAL APPOINTMENTS VACANT, ETC. . . . .</b>		418
		<b>MEDICAL APPOINTMENTS: IMPORTANT NOTICE . . . . .</b>		418
		<b>DIARY FOR THE MONTH . . . . .</b>		418
		<b>EDITORIAL NOTICES . . . . .</b>		418

### SUBACUTE BACTERIAL ENDOCARDITIS.<sup>1</sup>

By D. M. McWhae, C.M.G., C.B.E., M.D. (Melb.),  
M.R.C.P. (Lond.),

Honorary Physician, Perth Hospital; Honorary Physician  
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Physician, No. 8 Australian Repatriation Hospital.

TOWARDS the end of last January I saw for the first time two ex-soldiers, aged 31 and 33 years respectively (one a miner in the north-west, the other a farmer in the south), who had suffered from increasing ill-health during 1920, but who had nevertheless carried on their occupations until December. During the first part of the year they had been able to do a full day's work, but during the last few months they had only been able to carry on for two or three hours each day.

They complained of a general feeling of malaise, marked loss of weight, weakness, occasional sweats and shortness of breath on exertion, symptoms which had existed practically twelve months and which had steadily increased in severity. There was nothing very definite about these symptoms, but they presented the physical signs which are so characteristic of subacute bacterial endocarditis and which showed that they were doomed to certain death.

<sup>1</sup> Read at a meeting of the Western Australian Branch of the British Medical Association on June 15, 1921.

### Ætiology.

Subacute bacterial endocarditis occurs generally in adults between the ages of 20 and 40. It is quite distinct from the simple endocarditis associated with rheumatic fever which has different symptoms, physical signs and course. It is also quite different from acute ulcerative or malignant endocarditis in which the heart condition is rather secondary to a general septicæmic infection, with high fever, great toxæmia, septic emboli and which ends in death in a few weeks. Clinically, subacute bacterial endocarditis occupies a position midway between simple and ulcerative endocarditis. It is not an uncommon disease. It is uncommon only because it is not looked for or is not recognized. In its earlier stages, however, before the characteristic physical signs have developed, owing to its insidious onset and generally prolonged course, it may be missed over and over again. Dr. A. E. Gow reports that in a period of 17 months thirty cases of this disease occurred at St. Bartholomew's Hospital in 345 medical autopsies.

Pathologically vegetations occur on the aortic or mitral valves, more commonly on the aortic than on the mitral, and ulceration occurs only slightly or not at all. Valves damaged by previous attacks of rheumatic fever are most frequently affected because of their lowered resistance to infection. Bac-

teria occur in the vegetations and blood stream; the vegetations may consist chiefly of masses of bacteria and yet the blood may be bacteria free.

Libman states that 95% of cases are due to the *Streptococcus hemolyticus* and that the remaining 5% are mainly due to the influenza bacillus.

#### Clinical Course.

The disease begins insidiously and may last from a few months to two years; it always ends fatally. As already stated, symptoms (malaise, loss of weight, ill-defined pains in the joints and muscles and shortness of breath) are not characteristic. The presence of endocarditis may be first suggested by irregular, unexplained fever, but in two of my cases the first symptoms to suggest serious trouble were loss of sight lasting several hours, due to retinal embolism, in one and acute nephritis, with marked oedema, in the other. The temporary loss of sight occurred on a hundred miles journey to a doctor, so that this patient had at last concluded that something serious must be amiss. This occurred in October and, although the presence of a heart murmur was detected, the existence of endocarditis was not suspected, as the patient returned to work, carried on for six weeks, then came to Perth and went to Rottnest for a holiday. In the other patient acute nephritis had been diagnosed, but the underlying endocarditis cause of the nephritis apparently had not been noticed.

In both these patients, when seen in January, the physical signs were very striking and were written over them for anyone who looked to read. They were as follows:

(i.) Aortic valve disease existed in both. Each had a double aortic murmur, a much enlarged heart, a "Corrigan" pulse and the usual signs of aortic regurgitation. These signs in themselves did not point to the existence of an active endocarditis and may have meant old valvular disease of the heart, but in one patient the character of the murmurs and heart sounds showed considerable variations, which suggested presence of active endocarditis.

(ii.) An earthy or *café au lait* pallor. Although it is generally believed that aortic regurgitation is sufficient to cause pallor, yet the marked anæmia and pallor of these patients strongly suggests an added infection, with profound secondary anæmia.

(iii.) Clubbing of the fingers was very striking, the toes being clubbed to a lesser extent. Clubbing of the fingers occurs in congenital heart disease, but when present with acquired valve disease, it very strongly suggests the association of an active infection. In fact, the presence of these three signs alone—valvular disease, clubbed fingers and earthy pallor—point forcibly to the existence of subacute bacterial endocarditis.

(iv.) Enlargement of the spleen in one patient to 3.7 cm. below the level of the umbilicus, in the other 3.7 cm. below the costal margin. Nearly all patients with subacute endocarditis have marked enlargement of the spleen, hence the great value of this sign from a diagnostic point of view.

(v.) Petechiæ (another very characteristic sign) were present about the feet and the clavicles. They

are embolic in origin and their existence is important diagnostically. Osler's nodes—tender cutaneous nodules—were not present in either patient.

(vi.) Gross embolic phenomena—also very common in this disease—occurred in one of the patients. First he had a retinal embolism, as already described; then, eleven days before death, cerebral embolism, with paresis of the right arm and temporary aphasia; finally, a few days before death, embolism into the right brachial artery, with obliteration of the pulse.

Infarcts, due to emboli, occur widely, although their existence was recognized before death in only one of these two patients. Those into the spleen, if large, cause pain and tenderness over the spleen. Those into the kidney may cause acute pain in the loin, followed by hæmaturia. To detect the latter, it is necessary to examine the urine on consecutive days for red corpuscles over a period of a week or two.

Emboli certainly occur in rheumatic endocarditis, but they are uncommon and are more or less accidental in origin, being due to thrombus formation. The occurrence of embolism, therefore, suggests acute or subacute bacterial endocarditis rather than simple rheumatic endocarditis.

(vii.) Irregular fever is always present and in both these patients, for the few months they were under observation, daily rises of temperature to 37.5° C. or 38° C. and occasionally to 38.5° C. occurred. Frequent sweats accompanied the pyrexia. The temperature may be normal for periods of a week or two. The comparatively slight degree of pyrexia, when compared with the septicæmic fever of ulcerative endocarditis, may obscure the diagnosis.

(viii.) The pulse-rate was higher than corresponded to the temperature rise; before death it rose to over 120 in both patients.

(ix.) The liver also was markedly enlarged in both patients, but this occurs so commonly in heart affections that it is not a significant symptom in the diagnosis of subacute bacterial endocarditis.

(x.) Nephritis, which occurred in one of my patients, is not an uncommon complication. It is a special form of universal glomerulo-nephritis and was found nine times by Dr. Baehr in 77 pairs of kidneys examined.

#### Prognosis.

This is hopeless, hence the importance of recognizing the disease. One patient died a cardiac death, with dyspnoea and heart failure, seven weeks after first being seen by me. The other died chiefly of nephritis and general oedema fourteen weeks after being seen.

Patients with this disease may also die of progressive anæmia or embolism.

In this connexion I will refer to a third case of subacute bacterial endocarditis in which death occurred very early in the course of the disease from an embolic accident.

G.N., aged 28 years, previously in perfect health, while having afternoon tea suddenly put his hand to his head as if in great pain, screamed "My God!" and at once became comatose and died two hours later. Some of his organs are here. Fresh vegetations are seen on the aortic valve and there is an



area of softening and hæmorrhage in the right occipital lobe, due to cerebral embolism. Such a clinical history is, however, extremely rare. In the great majority of patients this disease runs a course of many months, as already described.

#### Diagnosis.

In an established case the insidious onset, prolonged course, irregular fever, earthy colour, presence of an aortic or mitral murmur, petechiæ, clubbed fingers and enlarged spleen form a group of symptoms and signs whose significance, when once appreciated, it is impossible to miss.

In the earlier stages the diagnosis may be difficult. Illnesses characterized by large spleen and anæmia are often diagnosed as Banti's disease. Patients with "disordered action of the heart" and with chronic valvular disease of the heart should be carefully observed for the signs of subacute endocarditis.

The diagnosis in the following case was difficult: T.R., aged 32 years, was admitted to the base hospital in December with atypical rheumatism, slight swelling of ankle and shoulder, loss of weight, occasional sweats and some dyspnoea. The spleen was enlarged, but there was no clubbing of the fingers. There was present a double aortic murmur.

He left hospital after a few days, at his own request. In April he suddenly fell down unconscious and became hemiplegic on the right side. Further observation is necessary before it can be said definitely whether subacute endocarditis is present or not.

#### Treatment.

When once established the disease is fatal and therefore treatment is in prevention. Since diseased valves are places of weakened resistance to infection, it is important to treat, in patients with valve disease, septic foci in the teeth, tonsils and sinuses, etc.

#### Post Mortem Findings.

Autopsies were carried out in two of the three patients who died and I have some specimens here to-night.

The aorta is healthy. Fibrinous vegetations are seen on the aortic valves, where a small recent ulcer is also present in one case. The spleen is very large and shows many small hæmorrhagic infarcts. There is a large nutmeg liver, due to passive congestion. The nephritic kidneys and a lung, with a hæmorrhagic infarct, have not been retained.

#### MR. PEPYS.

By C. MacLaurin, M.B., C.M., F.R.C.S.E.,  
Sydney.

MR. PEPYS suffered from stone in the bladder before he began to keep a diary. He does not appear to have been physically a hero; had he been a general, no doubt he would have led his army bravely from the rear, except in the case of a retreat; but so great was the pain that he submitted his body to the knife on March 26, 1658. Anæsthetics in those days were rudimentary, relaxing rather than anæ-

thetizing the patient. There is some reason to believe that they were extensively used in the middle ages and contemporaries of Shakespeare seem to have looked on their use as a matter of course; but, for some reason, they became less popular and by the seventeenth century most people had to undergo their operations with little assistance beyond stout hearts and a sluggish nervous system.

Cutting for the stone was among the earliest of surgical operations. In ancient days it was first done in India and the glad news that stones could be removed from the living bladder filtered through to the Greeks some centuries before Christ. Hippocrates knew all about it and the operation is mentioned in that Hippocratic oath according to which some of us attempt to regulate our lives. At first it was only done on children, because it was considered that adult men would not heal properly and that the only result in them would be a fistula. The child was held on the lap of some muscular assistant, with one or two not less muscular men holding its arms and legs. The surgeon put one or two fingers into the little anus and tried to push the stone down on to the perineum, helped in this manœuvre by hypogastric pressure from another assistant. He then cut transversely above the anus, strong in the faith that he would probably, if the Lord so willed, open into the neck of the bladder. Next he tried to push the stone out with his fingers still in the anus; it is not quite clear whether he would take his fingers out of the anus and put them into the wound, or *vice versa*; this failing, he would seize the stone with forceps and drag it out through the perineum. As time went on it was discovered that more than three or four assistants could be employed, using others to sit on the patient's chest, thus adding the *peine forte et dure* to the legitimate tortures of mediæval surgery and surrounding him with a mass of men. Imbued with a spirit of unrest by the struggles of the patient, the mass swayed this way and that, until it was discovered that, by adding yet more valiants to the wings of the "scrum," who should answer heave by counter-heave, the resultant of the opposing forces would hold even the largest perineum sufficiently steady for the surgeon to operate; and men came under the knife for stone. Next the patient was tied up with ropes, somewhat as we used to do in our boyhood sport of cock-fighting. How wonderful a thing is the Rope! How perfect in all its works—from the Pyramids built with the aid of the Rope and the Stick to the execution of the latest murderer! One might write pages on the Rope and human progress; but for our purpose we may simply say that Mr. Pepys was probably kept quiet with many yards of hemp. Those who cut for the stone were specialists, doing nothing else; their arrival at a patient's house must have resembled an invasion, with their vast armamentarium and their crowds of assistants. By Pepys's time Marianus Sanctus had lived—yes, they called him "Holy." He it was in Italy in 1524 who introduced the *apparatus major*, making the operation a little less barbarous than that of the Greeks. This God-sent apparatus consisted mainly of a grooved staff to be shoved into

the bladder and a series of forceps. You cut on to the staff as the first stage of the operation; it was believed that if you cut through the middle line in the raphé, the wound would never heal, owing to the "callosity" of the part; moreover, if you carried your incision too far back, you would cause fatal hæmorrhage from the inferior hæmorrhoidal veins. Having then made your incision well to the right or the left, you exposed the urethra, made a good big hole in that pipe and inserted a fine able pair of tongs, with which you seized hold of the stone and crushed it, if you could, pulling it out in bits; or if the stone were small and you had preternaturally long fingers, you might even get it out on a finger-tip.

This would be the operation that was performed on Mr. Pepys. The results in many cases were disastrous; some men lost control of their *sphincter vesicæ*; many were left with urinary fistulæ; in many the procreative power was permanently destroyed by interference with the seminal vesicles. Probably many of us would have preferred to keep our calculi rather than allow a mediæval stone-cutter to perform upon us; we are a degenerate crew. It is not altogether displeasing to imagine the roars of the unhappy Pepys, trussed and helpless, a pallid little Mrs. Pepys quaking outside the door, perhaps not entirely sorry that her own grievances were being so adequately avenged, although the vengeance was vicarious; while the surgeon wrestled with a large uric acid calculus which could with difficulty be dragged through the perineum. It is all very well for us to laugh at the forthright methods of our ancestors; but, considering their difficulties, no anæsthesia, no antiseptics, want of sufficient surgical practice and the fact that few could ever have had the hardness of soul necessary to stand the patient's bawlings, it is remarkable that they did so well and that the mortality of this appalling operation seems to have been only about 15% to 20%. Moreover, we may be pretty certain that no small stone would ever be operated upon; men postponed the operation until the discomfort became intolerable. It remained for the genius of Cheselden, when Pepys was dead and possibly in Heaven some twenty years, to devise the operation of lateral lithotomy, one of the greatest advances ever made in surgery. This operation survived practically unchanged till recent times.

Pepys's heroism was not in vain and was rewarded by a long life free from any serious illness until the end. March 26 became to him a holy day and was kept up with pomp for many years. The people of the house wherein he had suffered and been strong, were invited to a solemn feast on that blessed day and as the baked meats went round and the good wine glowed in the decanters, Mr. Pepys stood at his cheer and once again recounted the tale of his agony and his courage. The stone reformed, but not in the bladder. Once you have a uric acid calculus, you can never be absolutely sure that you have done with it until you are dead, and in the case of Pepys recurrence took place in the kidney. When he died, an old man, in 1704, they performed a *post mortem* examination on his body, suspecting

that his kidneys were at fault, and in the left kidney found a nest of no less than seven stones, which must have been silently growing in the calyces for unnumbered years. Nor does it seem to me impossible that his extraordinary incontinence—he never seems to have been able to resist even the coarsest of feminine wiles—may really have been due to the continued irritation of the old lithotomy scar in his perineum. There is often a physical condition as a basis for this type of character and some trifling irritation may make all the difference between virtue and concupiscence. This reasoning is probably more sensible than much of the psycho-analysis which is at present so fashionable among young ladies. Possibly also the sterility of Mrs. Pepys may have been partly due to the effects of his operation.

One unpleasant result to Mr. Pepys was the fact that whenever he crossed his legs carelessly he became afflicted with a mild epididymitis—his own description is much less polite. No doubt the barbarous operation that had been performed upon him, had left some small septic focus which set up trouble on occasion. His little failing in this respect must have been a source of innocent merriment to the many friends who were in the secret. He was troubled with attacks of severe pain whenever the weather turned suddenly cold. At first he used to be in terror lest his old enemy had returned, but he soon learned to regard the attacks philosophically as part of the common heritage of mankind. Probably they were due to reflex irritation from the stone growing in the kidney.

Considering the by no means holy living of Mr. Pepys, it is rather remarkable that he never seems to have suffered from venereal disease and this leads me to suspect that possibly these ailments were not so common in the England of the Restoration as they are to-day. It seems impossible that any man could live so promiscuously as Pepys in Sydney without paying the penalty and the experience of our army in England seems to show that conditions there must be much the same as here. I often wonder whether Charles II. and his courtiers were really representative of the great mass of people in England at that time; probably the prevalence of venereal disease in modern times is largely due to the immense increase in city life and men and women have always been very much the same from generation to generation.

Ignoble as was Pepys, yet he showed real moral courage during the plague. When that great enemy of cities attacked London he, very wisely, sent his family into the country at Woolwich, but he himself bravely held to his duty and continued to work at the Navy at Greenwich. We owe far more to his organizing power and honesty—not a bigoted variety—than is generally remembered. His babble is not the best medium for vigorous description and you will not get from Pepys any idea of the epidemic comparable with that which you get from the journalist Defoe; yet through those awful months there lurks a feeling of impalpable horror which still impresses mankind.

The momentary glimpse of a puffy citizen

stumbling one night over the corpse of a man dead of the plague and running home terrified; a man burying his only child and his wife and then being buried himself, all in two days; the horrid atmosphere of fear and suspicion which overlay London; and Pepys himself repeatedly setting his papers in order, so that the world might think well of him should the Lord take him suddenly; all give us a sense of doom all the more poignant because two years ago we went through a much milder version of the same thing ourselves. The papers talked glibly of the influenza as "the plague." How different it was from the real bubonic plague is shown by the statistics. In five months of 1665 there died of the plague in the little London of that day about 70,000 people according to the bills of mortality; in truth, probably far more; that is to say, nearly a fifth of the people perished. There is no doubt that the bubonic plague kept back the development of cities and therefore of civilization for centuries and that the conquest of the rat has been one of the greatest achievements of the human race. What is at present happening in Norfolk Island shows how slender is the hold which mankind has upon the earth; and wherever the rat is able to breed unchecked, man is liable at any time to sink back into savagery. The rat, the tubercle bacillus, the bacillus of typhoid are the greatest enemies of mankind; we hold our position against them at the price of eternal vigilance and probably the rat is not the least deadly of these enemies.

I need not go through the "Diary" in search of incidents; most of them, while intensely amusing, are rather of interest to the psychologist in the study of self-revelation than to the medical man. When Pepys's brother lay dying the doctor in charge hinted that possibly the trouble may have been of syphilitic origin; Pepys was virtuously wrathful and the unhappy doctor had to apologize and was immediately discharged. I cannot here narrate how they proved that the poor unconscious patient had never had syphilis in his life; you must read the "Diary" for that. Another time Pepys was doing what he should not have been doing at an open window in a draught; the Lord punished him by striking him with Bell's palsy. Still again, at one time he got obstinate pseudo-ilens. Everybody in the street was much distressed at his anguish; all the ladies sent in prescriptions for enemata; the one which relieved him consisted of small beer. Indeed, one marvels always at the extraordinary interest of Pepys's lady friends in his most private ailments.

But the great problem remains; why did Pepys write down all these intimate details of his life? Why did he confess so many things which most men would not even confess to themselves? Why did he write it all in cypher? Most amazing of all, why did he keep the manuscript for nearly thirty years, a key with it? Why, when he had to narrate anything particularly disgraceful, did he write in a mongrel language of bad French, Spanish and Italian. He could not have seriously believed that a person who was able to read the "Diary," would not be able to read the very simple foreign words with which it

is interspersed. One thinks of the fabled ostrich which hides its head in the sand. The problem of Pepys remains still unsolved, despite the effort of Stevenson in "Familiar Studies of Men and Books." Stevenson was the last man in the world to understand Pepys, but more competent exegetists have tried and failed and Pepys still remains a mystery to ordinary men. Perhaps some psychologist will try his hand.

No man can be considered educated until he has read at least part of the "Diary"; in no other way is it possible to get so vivid an idea of the ordinary people of a past age; as we read they seem to live before us and it comes as a shock to remember that poor Pall Pepys and "my wife" and Mrs. Batelier and Sir William Coventry and Mercer and the hundreds more who pass so brilliantly before us, are all dead these centuries. If this little paper shall send some to the reading of this most extraordinary book, I shall be more than satisfied. The only edition which is worth while is Wheatley's; some editions simply transmute Pepys into an ordinary industrious and humdrum civil servant.

#### A SIMPLE OPERATIVE METHOD OF REDUCING OBSTINATE MALPOSITION IN COLLES'S FRACTURE AND IN SUPRA-CONDYLAR FRACTURES OF THE HUMERUS.

By C. E. Corlette, M.D., Ch.M. (Syd.),  
Honorary Surgeon to the Sydney Hospital.

THERE are certain fractures that sometimes offer a good deal of difficulty to reduction, while it is, nevertheless, specially important to secure a good anatomical result, because of the long and sometimes permanent disability that tends to occur when reduction has been imperfect. Amongst these are Pott's fracture, Colles's fracture and transverse supra-condylar fractures of the humerus.

While I think I can safely say that I have devised an easy, comfortable and thoroughly satisfactory method of overcoming every difficulty of a Pott's (in which I include Dupuytren's) fracture, I shall postpone its consideration to another occasion. My experience of Colles's fracture for some years past has been chiefly in connexion with referred cases, either difficult ones which had resisted all ordinary efforts at reposition or neglected cases. For these I have evolved a very satisfactory method which I have employed now about six times with complete success in every respect and which I feel justified in recommending for such cases.

It is first of all necessary to have X-ray plates of the seat of fracture in two positions or planes as nearly as possible at right angles to one another, lateral and antero-posterior; and from these plates should be studied the particular features of the deformity, as far as possible. The patient is anaesthetized and an incision is made over the seat of fracture, or two incisions may be made if desired. The incision is quite small and the tissues should be separated so that the distal fragment can be reached at the fracture-line. A strong, sharp hook, or occasionally two hooks, such as are sometimes



used for retractors, are inserted, so that the points catch on the edge of the distal fragment, and traction is made in such a direction as to undo impaction and restore position. An assistant is required to counter-extend and another may be required to manipulate the hand. Ideal reduction can be accomplished, though sometimes it has required very strong traction when the malposition has remained uncorrected for too long. I have had to do this more than two weeks after the injury. Reduction having been achieved, the wound is closed and the patient is treated otherwise as in simple fracture.

I have at various times had trouble in reaching the desired result in supra-condylar fractures of the humerus with backward displacement of the lower fragment and of the elbow. Recently there was referred to me a child with one of these fractures which had defied every effort at reduction, though it had been treated by most competent hands. Remembering my successes with the lower extremity of the radius in Colles's fracture, I applied a very similar method. Under an anæsthetic a very small wound was made with a tenotomy knife through the skin over (not above) each condyle, the wounds being only large enough to admit the hooks. Two strong, sharp hooks were inserted through the wounds and adjusted carefully so that the points engaged the proximal surface of the condylar fragment. The wounds were made over and not above the condyles, because, when tension is applied, the distal fragment descends and a high wound might stretch the skin too much. An assistant counter-extended at the shoulder and a second assistant slowly brought the forearm up into full flexion, while strong tension was exerted on the condylar fragment by the hooks on either side. The tractors were then removed and the limb was put up in full flexion under the anæsthetic. I may say that in these cases it is advisable to put on a layer of starch or plaster of Paris externally. An X-ray plate taken after the operation showed anatomically perfect reduction and there was no further difficulty in the treatment.

I commend these methods as effective and simple ways of handling and overcoming difficulties that defeat ordinary efforts.

#### NOTE ON THE FINDING OF *ANCHYLOSTOMA DUODENALE* IN THE INTESTINES OF THE PIG.

By John Legg, B.Sc., B.V.Sc., M.R.C.V.S.,  
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and

J. A. Rheuben,  
Inspector of Slaughter Houses, Townsville, Queensland.

O'CONNOR reported in THE MEDICAL JOURNAL OF AUSTRALIA for October 2, 1920, on the finding of *Anchylostoma duodenale* in the intestine of the pig in Funafuti, Ellice Island. Following on this, Maplestone reported in THE MEDICAL JOURNAL OF AUSTRALIA on the examination of 182 pigs from the Townsville district of Queensland, with negative results in each case. So far as the writers are aware, no case has been recorded of the occurrence

of *Anchylostoma duodenale* in the intestine of the pig in Australia.

During July last a small number of pigs from Cromarty, a small railway siding about twenty miles from Townsville, was killed and, in accordance with the usual practice, the intestines were examined by one of us (J. A. R.) for parasites.

In three of the animals nematodes closely resembling *Anchylostoma duodenale* (man) were found attached to the mucous membrane of the duodenum; they were identified as such by Dr. G. Sweet, of the Melbourne University.

The pigs in question were semi-domesticated.

The discovery of *Anchylostoma duodenale* in pigs in North Queensland would seem to us to be of importance and to suggest the carrying out of experiments to ascertain with what facility pigs can be infected from human sources.

#### REMINISCENCES OF THE PLAGUE.

By E. H. Binney, M.B., Ch.M. (Syd.),  
Sydney.

It is now over twenty years ago since the serious outbreak of bubonic plague occurred in Sydney and many of us recollect it well. Those of us who were engaged in industrial practice at the time, had to be on the *qui vive* for suspicious cases. The daily press has emphasized the monumental work that the late Dr. Ashburton Thompson did on plague in his capacity as President of the Board of Health.

There are at present in Sydney, both in and out of the public service, medical men and others who worked personally in association with Dr. Thompson. So should it become necessary, as in other epidemic visitations, to establish a consultation committee, we are assured of an experienced *personnel*.

The first case in that epidemic was reported by Dr. Sinclair Gillies; the patient came from Ferry Lane, Dawes Point, part of "The Rocks" area.

I was in lodge practice at the time and had a great many waterside labourers on my list and had, of course, to keep my eyes open. Dr. Tidswell was in the public service at the time and contributed largely to the scientific and clinical investigation of the disease, as old files of the *Australasian Medical Gazette* will show.

When the Quarantine Station at North Head was opened, the late Sir John See appointed Dr. Clubbe as consultant, as it was thought that such a well-known gentleman, with his high medical reputation and clinical knowledge, would, in addition to the excellent departmental staff, help to assuage the panic of a public that was, as in all such cases, beginning to effervesce. I was closely associated with Dr. Clubbe in other work at the time and with him visited the Quarantine Hospital.

I can remember reporting one case and the Government Officer sent in consultation was the present Director-General. This case was interesting. It was not in one of my many waterside worker patients. I was at the time attendant on some of the theatres and this patient a thrifty Scotch "mummer," was reported to me as "ill." His his-



tory was that, having got a part as French courtier or haughty "Jeames" waiter, he needed heavy face powdering and owing to the high price of cosmetics his economical soul led him to use ordinary flour which he kept on his dressing-room table. We all know the general sanitary conditions behind the scenes and how close confinement of many humans, improvised suppers, etc., lead to particles of food refuse being left carelessly about, which attracted the flea-infected rat, whose fleas congregated on the package of flour, which, in due time, was well rubbed into a closely shaven face and made to adhere by the liberal use of grease paint. A cervical adenitis resulted, the *Bacillus pestis* was demonstrated and the case showed all the clinical symptoms of bubonic plague. Most patients, of course, showed femoral adenitis, but not all. I remember a bright little girl in Miller's Point with very bad axillary adenitis, but, of course, the majority of the cases occurring in industrial workers were bubonic (femoral).

An interesting clinical feature that remains in my memory is that the process of inflammation and suppuration resulted in a peri-adenitis. One case I saw at North Head in a boy, where the bubo was incised, the peri-adenoid suppuration had so isolated the gland that it popped out like a kernel from a nut. Such a choice of site for the intensity of inflammation may occur for the presence of an almost diagnostic sign in bubonic and other gland cases, i.e., exquisite tenderness over the site of the inflamed gland. The patient would flinch at the very prospect of being palpated over the part. This clinical sign made a great impression on me and the intensity of the sensitiveness was more marked than that over McBurney's spot in a case of acute appendicitis. There were, of course, the other varieties of the disease, as the clinical records of the Quarantine and other hospitals will show—septicæmic and pneumonic, with their dramatic onset, progress and fatal ending. The public were naturally panic-stricken. The very name of the disease spelt tragedy. It is told of a patient in the middle of the epidemic being removed by the ambulance heralded by a masquerading officer imitating the action of "aerial swimming," to clear the street and loudly exclaiming "Plague!"

Such scenes as these, together with enforcement of quarantine and detention of "contacts," exasperated the public, who were eager for an explanation of this visitation. Explanations of causes were suggested, e.g., peculiar movements of the heavenly bodies, the increase of horse-racing and drinking in our midst! It was not war-time or it would have been put down to the effect of high explosives or to a special form of enemy frightfulness! When these suggestions were being made and their opinions of the cause sought from the proper authorities, only one reply came: "Rats!" This took some time to soak in and, after the domestic flea had been duly indicted, a war was declared against rats and fleas. The vendors of rat traps, rat poisons and insecticides reaped a harvest. The disease was made notifiable and all persons with suspicious symptoms were asked to report either to their medical attendant or to the Board of Health, to which a

special consulting staff of experts had been appointed. Of those reporting voluntarily, the majority, of course, were suffering from venereal disease; some were affected with simple lymphadenitis from some simple infection, or overwork or excessive exercise. In fact, anything of discomfort below the umbilicus was alarming. Appendicitis, strangulated hernia, threatened miscarriage and many other conditions caused alarm in the minds of the lay public. The scare got a good hold of the people and a great deal of harm was done to business houses, stores, hotels, etc.. The medical profession was all along suffering from the postponement of operations, because of the public's general fear of consulting a doctor, lest the patient should be quarantined as a plague suspect.

The truth of the old proverb of "one's meat being another's poison" was exemplified in one case. The story is this: There was a scare of an outbreak of plague in one of the city hotels in the precincts of the Law Courts. Many of the legal fraternity were accustomed to foregather for lunch. This coterie was abruptly broken up and its members scattered. There was one of the many who had been "called and not yet chosen," finding that his usual place for putting on the mid-day nose-bag had become pestilential, betook himself to his club, donned the orthodox silk hat and frock coat suitable to the surroundings, had his lunch at the special legal table with prominent solicitors, barristers and judges, eventually becoming well known in a special branch of the law and now occupies a seat on the Bench. If these facts are true, the poison of the plague was meat to this gentleman as much as marriage promise of Gilbert's young barrister to the "rich attorney's elderly ugly daughter."

Of course, the plague had its pathetic rather than its humorous side and, whilst emphasizing the latter, the former must not be forgotten. The disease attacked the young and active, who, as in other epidemics, were most exposed and fatal results were at times most tragic. There were, too, the martyrs to science. The late Dr. Parkinson met his death by accidental inoculation, not in this epidemic, but shortly after, in London, whilst engaged in original work on this subject. No doubt his resolution to embark on original work was prompted by the Sydney outbreak. Herein was a case of the "supreme sacrifice" as veritable and courageous as any of the many that occurred during the war.

My further reminiscences of the plague were in the East and, as these remarks only refer to the Sydney outbreak, those on its occurrence elsewhere are of much less interest.

The name of the late Dr. Ashburton Thompson has been mentioned in the early part of these remarks. He was a past-master in officialdom and a general in discipline, which accounts for the high degree of efficiency of all officers trained in his service.

It pleases most of us to know that our Director-General is Dr. W. G. Armstrong, the first graduate of the Sydney Medical School.

## Reports of Cases.

### A RARE TYPE OF INTRA-CRANIAL TUMOUR.

By T. H. R. Mathewson, M.B., Ch.B. (Edin.),  
Brisbane.

J.B., a little girl, was born on March 30, 1917, the mother's confinement being apparently uneventful. The child was breast-fed, thrived well and was a very contented baby. When nine months old she could stand and at twelve months she walked well and had commenced talking. At eighteen months she could speak in sentences, could pronounce all her words distinctly and was a particularly happy and intelligent child. At about this age she fell on to the back of her head and was rendered unconscious for several minutes, but she completely recovered in a few hours. When nineteen months old she suffered from "dengue" and for about three weeks subsequently she suffered from pain in the head and appeared to lack the usual control over her urine. During the following three months she suffered from whooping-cough and gastro-enteritis, from both of which she made a good recovery. When she was two years old she seemed to be in perfect health, with the exception that a slight squint was observed occasionally, the left eye turning upwards and outwards. During the next few months she remained comparatively well, but sometimes, on rising in the morning, she would complain of headache and of feeling sick and would vomit during her breakfast. For the remainder of the day, however, she would be well. It was then noticed that the child was becoming irritable. On several occasions she bit her playmates. When she was about two and a half years old the squint in her left eye became more marked and vomiting occurred more frequently. An ophthalmologist, to whom the child was taken, informed the parents that she had had "a hæmorrhage at the back of the left eye" and could see very little with that eye. Spectacles were ordered and, after they had been worn for about one month, the headache and the vomiting diminished. The child now began to complain that she felt tired and she would not walk far when taken out. While in the house, she would sit in her rocker for hours, falling asleep at inter-

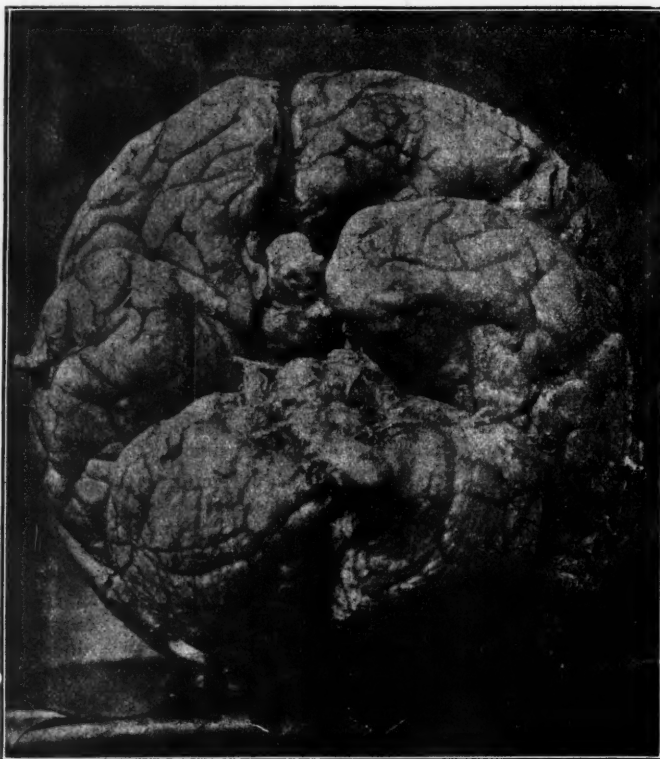


FIGURE I.

vals. When she was three years old the headache and the morning sickness occurred frequently. She was again taken to the ophthalmologist, who ordered a change of glasses. The child appeared to improve during the following two months. Then the vomiting again became frequent. The child cried periodically and complained that mosquitoes were biting her left leg when there were no mosquitoes about (this sensation was due apparently to a sensory change). She became very dull and showed no inclination to play. She would put all kinds of things into her mouth, such as sand, shells, paper; she bit her celluloid toys and was habitually biting soap. She had always been very clean, but now she began to be careless and dirty. She would put her fingers into her porridge, squeeze her jelly through her fingers or deliberately turn her milk out on to the table cloth. On one occasion she brought a kerosene lamp from the bedroom, took off the globe and turned the lamp upside down on the table. She became very destructive, tearing her books, breaking her combs and tooth brushes and scratching the paint on the walls. She was peevish and contrary. Her sleep became broken. She would waken with the slightest noise and sit bolt upright in bed. She began to have less control over her urine and suffered from "feverish attacks." She was taken to a physician, who told the parents that she would have "off turns" until her eyes were correctly tested and that this would be impossible until she was older.

She was brought to me shortly after a "slight convulsion." There was very little to be made out at my first examination. She was kept under observation, however, and, as she did not respond to treatment, she was sent into hospital. Her parents noticed that she



FIGURE II.

was speaking more slowly, although she pronounced every syllable distinctly—she spoke uncommonly well for her age. As she improved after a week's stay in hospital, she was allowed to go home. A few days later the child took convulsions and she was brought back to hospital. Lumbar puncture was performed; cerebro-spinal fluid was withdrawn under considerable pressure, but it showed no abnormality either macroscopically or microscopically. She seemed more comfortable after the puncture and within three days she was quite cheerful. It was now noticed that she had weakness of the left arm and leg, some degree of muscular rigidity and exaggeration of the deep reflexes on the left side, on which side an ankle clonus was present. For a while she improved and the muscular rigidity became less. About two weeks later she became slightly cyanosed and tremulous, her temperature rose, her speech became thick and she complained of pain in the head and of a feeling that she was falling. The muscular rigidity in the left arm and leg increased. She was treated by the administration of potassium iodide and mercurial inunctions, although there was no history of syphilis and her cerebro-spinal fluid and blood and the blood of both parents failed to react to the Wassermann test. A leucocyte and differential count of her blood revealed nothing abnormal. Ophthalmoscopic examination showed slight optic neuritis in the left fundus. There was no evidence of ophthalmoplegia. The child appeared to improve for a few days, but later she became excited, slightly cyanosed and tremulous. Her temperature rose, the pupil of the left eye became widely dilated

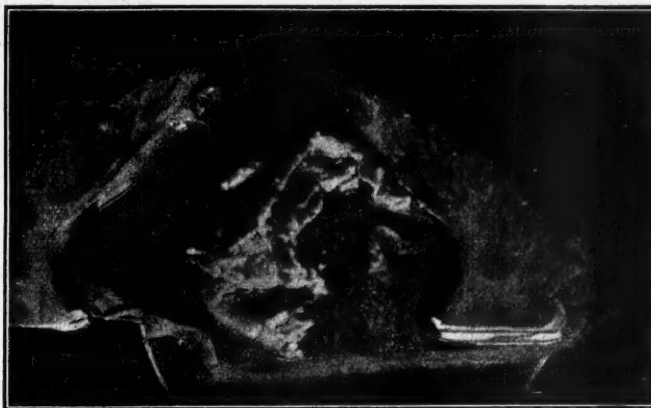


FIGURE III.

and the eyeball seemed to protrude. She again took convulsions. Lumbar puncture was repeated, the fluid obtained being under considerable pressure but normal in character. Twelve hours later she was conscious and cheerful. The rigidity of the left arm and leg was becoming more marked and twitching of both sides of the face was observed, the right angle of the mouth being drawn downwards, the left cheek upwards. Her voice was noticed to be high pitched. Ophthalmoscopic examination showed commencing optic atrophy in the left fundus, slight optic neuritis in the right. Radiographic examination of the skull revealed nothing abnormal. A few days later she again became excited, complained of severe pain on the top of the head and expressed great fear of falling whenever she was touched. If raised to a sitting position, she tended to fall towards the left. She then became very dull and lay without speaking for several days.

I conferred with Dr. S. F. Macdonald and Dr. Thelander and we agreed that the symptoms pointed to the presence of an intra-cranial tumour. Though the prospects of relieving the condition by operation seemed remote, we decided that, as antispecific treatment had failed and as the child was obviously getting worse, an exploratory operation was justifiable. This was carried out by Dr. Thelander. When a portion of bone over the right motor area was raised, nothing abnormal was detected beyond an unusual bulging of the brain substance; this was explored by means of a fine needle with no result. The child died shortly after the operation.

When the skull was opened *post mortem*, the base of



FIGURE IV.



FIGURE V.



the brain was found to be resting upon a large, thin-walled cyst, which contained about 120 cubic centimetres of straw-coloured fluid. The wall of the cyst was continuous with the soft tissue of a new growth hanging down into the interpeduncular space and apparently replacing the infundibulum and *tuber cinereum*. The brain and upper part of the spinal cord were removed and sent for examination to Dr. Latham, of the Pathological Department, Sydney University, who has furnished a report, which includes Professor Hunter's description of the anatomical relations.

Since the report of this case was written, I have noticed in THE MEDICAL JOURNAL OF AUSTRALIA, April 2, 1921, an abstract of a paper by William C. Duffy, who has reported three cases of squamous epithelial tumour of the hypophyseal region. One tumour occurring in a child of seven was of an adamantinomatous nature and took origin from an infundibular squamous epithelial nest.

#### PATHOLOGICAL REPORT.

By Oliver Latham, M.B. (Syd.),  
Pathological Department, Sydney University.

THE brain sent to me by Dr. Mathewson had been hardened in 10% formalin. The regions about the optic chiasma, interpeduncular space and infundibulum were obscured by the presence of numerous overhanging masses of soft tumour growth. When a vertical section dividing the brain into anterior and posterior halves and exposing the ventricles was made, it was evident that a large, cyst-like growth was connected with the pendulous masses and had burrowed its way into the cerebral tissues and lateral ventricles, causing various displacements. The cyst, with its ramifications, greatly resembled a hydatid and numerous white specks like curdled milk covered its inner aspect. These afterwards proved to be degenerated cellular aggregations.

Professor Hunter kindly described the anatomical relations as follows:

*Posterior Segment.*—There is a free cystic dilatation posteriorly. Medially the cyst is pushing the *septum lucidum* to the right, together with the columns of the fornix. To the left it rests on the superior aspect of the thalamus and extends to the caudate nucleus laterally. Distinct from this cavity, but with its wall in continuity with that of the interventricular cyst, is a second dilatation, which is attached to the region of the hypophysis. There is no sign of the hypophysis. The cyst dilates the lateral ventricles.

*Anterior Segment.*—The distension of the ventricles, especially the left, is more evident. The anterior horn of the left ventricle is occupied by a single large cyst, continuous with the cyst already encountered. There has existed only a contact relationship between the roof of the ventricle and the superior wall of the cyst. The floor of this portion of the ventricle is invaded by the cyst, so that the basal ganglia and the cortex of the orbital surface of the frontal lobe have been retarded in their development. The cyst wall has, over an extensive area, replaced the cortex and in one area is seen to be continuous by a neck (2 cm. in diameter) with the pendulous masses of tumour growth, which are continuous with the hypophysis region and attached to the right cerebral hemisphere. These masses are lying superior to the optic chiasma, which has been dislocated inferiorly by their growth and has become spread out over their surface. The olfactory tract has been destroyed by the growth on the left side, but is intact on the right.

The structures affected may be summarized as follows:

- (1) The left caudate nucleus and lenticular nucleus and the anterior limb of the left internal capsule as far posteriorly as the genu. These structures are imperfectly developed. The thalamus is dislocated.
- (2) The orbital gyri of the frontal lobe.
- (3) The left olfactory tract.
- (4) The optic chiasma. This structure is compressed.

#### Microscopical Details.

Both frozen and paraffin sections of the tumour masses and cyst have been examined by Professor D. A. Welsh and myself. The tumour appears to be of the nature of a cystic endothelioma in that it comprises numerous large and small spaces lined by a remarkably definite endothelium. The spaces are doubtless intercommunicating. Many of the cells are deep and rest on a moderately delicate stroma of loose and rather atrophic fibrous tissue, which contains large blood vessels and other smaller vessels recently formed. In the stroma are capillary hæmorrhages and aggregations of lymphocytes and *Gitterzellen*. In many places the endothelium has undergone degeneration, apparently of a hyaline or vitreous nature. The numerous cell-nests present, which are arranged as whorls of cells, show a similar degeneration. In both the endothelium and the cell-nests crystals are visible and suggest the possibility of calcareous degeneration.

The structure of the tumour resembles closely that of a psammoma. But it differs in its microscopical details from any new growth which we have previously encountered, although Dr. Keith Inglis has the record of an endothelial tumour with cyst-like masses which he discovered *post mortem* in the brain of a patient who was an inmate of the Sydney Hospital.

The origin of this tumour offers even more difficulty. Arising, as it does, in the neighbourhood of the hypophysis and apparently very soon after, if not before birth, it might represent the growth of an epithelial inclusion. An alternative opinion is that the growth is psammomatous in nature and arises from the *dura mater* or pia-arachnoid at the base of the brain, although psammomata are said to arise usually from the choroid plexuses or pineal gland. Woodhead, however, states that they arise from *dura mater* and *pia mater* in any position and that they may take origin even in the cerebral substance. Cholesteatomata occur at the base of the brain and are similar in structure, save that cholesterol replaces calcium.

Adami and recent American authorities state that these tumours arise from the endothelium of the lymphatic and vascular systems rather than from the brain-nerve coverings. We believe that the new growth grew very slowly. The interference with the development of such structures as the caudate and lenticular nuclei would imply a commencement in early embryonic life.

#### IMPERFORATE HYMEN.

By John Allan, M.B., B.S. (Glasg.),  
North Sydney.

E.E., aged 13 years and 2 months, a particularly well-developed girl for her age, indulges in stage dancing and swimming. She has had no previous illnesses; her only former medical attendances were for tonsillectomy some years ago, after which she had a severe hæmorrhage.

In her mother's family, consisting of five sisters, there has been no history of any menstrual irregularities.

I was called to see the patient one night at 11 p.m. and found her complaining of severe headache, giddiness and great pain over the lower part of the abdomen, with difficulty in urinating.

Examination showed her temperature to be 39.2° C., her pulse-rate 120 and her respirations 30 per minute. The respirations were thoracic in character. The tongue was slightly furred and moist. Oblique light showed the intestines to be making "ladders" all over the abdomen and the peristaltic waves were very marked to the palpating hand. Questioning elicited the fact that defæcation did not give the feeling of complete relief that is experienced when the bowel is thoroughly emptied. She stated that she had the desire, but not the power, to pass more. Urine was passed every thirty minutes, only in small quantities and with difficulty and pain. The abdomen was too tender to palpate deeply, but a rounded swelling, reaching half-way to the umbilicus, could be seen and felt. Lying on this swelling was a smaller rounded swelling, extending for about 6.25 cm. above the pubes. These swellings were obviously an enlarged or distended uterus and a distended bladder.



The patient was almost hysterical and further examination was deferred for that night.

*History of the Present Illness.*—This patient had been in perfect health until February of this year. In the beginning of that month (date uncertain) she was living at the coast and had a fall, not severe, but it caused her to feel sick and faint and she had considerable urinary discomfort for a few days thereafter. The urinary difficulties recurred about a month later without any obvious cause this time and at this period she first felt the inability to evacuate the bowel completely. These symptoms passed off after a few days, to return in an exaggerated form about a month later.

A careful traversing of the history could trace a menstrual molimen as having occurred at the beginning of February, twice in March, once in April and on May 21, the night I was called to see her. She could not fix definite dates, but the above expresses the best of her recollections.

Her teachers towards the end of this time had chided her for being listless and careless in her carriage; one of them had remarked that her stomach was far too prominent and she was stooping in a way that no girl of her development should do. She also noticed herself at this time that any step in her dancing which involved abduction of both thighs, had become painful and more difficult.

She was given a sedative that night and orders were left to have her prepared for an anæsthetic the following morning.

Next morning, under the muscular repose of the anæsthetic, the swellings already described were more marked, but nothing indicating distended Fallopian tubes could be seen or felt.

Examination of the external genitals showed all the parts normal, with the exception of the hymen, which persisted as a membrane completely occluding the vaginal orifice. I would like to emphasize here that the membrane was anatomically hymen.

The hymen was thick and fleshy looking, with the exception of a small area, circular and about 6.25 mm. in diameter, in the centre of the membrane. This central area was translucent, the retained matter showing through it a dark blue, in contrast with the surrounding flesh colour. After inspection the membrane was punctured with a tenotomy knife and the tension forced the fluid upwards a distance of 24 or 25 centimetres. The patient was deeply anæsthetized at this time, so that contraction of the abdominal muscles contributed nothing to the force with which the fluid was expelled.

The fluid was allowed to drain slowly through the puncture until the pressure had lessened considerably, when the membrane was freely slit open.

In all, 740 c.cm. of fluid were collected and measured and some was lost, probably about 180 c.cm..

The fluid resembled cocoa made without milk, dark brown in colour, with a little dark brown, finely granular sediment. There was no odour. Internal examination disclosed a dilated, but not obliterated, cervix and the Fallopian tubes were not distended.

I report this case fully because imperforate hymen is a very rare condition and, further, because it differs so greatly from the descriptions of this condition usually found in text-books.

The early onset of the symptoms seems to be unusual, the ages commonly reported being 16 to 20 years.

The fluidity of the discharge is remarkable, it being generally described as tarry or treacly in consistence. I have not been able to find any reference to the quantity of fluid evacuated in a case of this kind; but, if we consider that 150 to 180 c.cm. is the average amount lost at a menstrual period, we have here a quantity representing six months' menstruations, probably the whole time that this girl has been menstruating.

It is generally assumed that resorption accounts for the inspissated matter usually evacuated, but we have here a case where little or no resorption can have taken place and yet the fluid was under a very high pressure which would have favoured it, if it had been at all apt to occur. I think, from a careful consideration of this case, that the more likely cause of the various ages at which symptoms begin and the varying consistency of the matter evacuated, is to be found in the permeability of the occluding mem-

brane to the smaller molecules of the more fluid constituents, rather than to a resorption which seems to be subject to many vagaries. Permeability of an abnormal membrane would be more liable to vary than the absorptive power of a normal genital tract.

The high degree of tension of the retained fluid without distension of the Fallopian tubes, the dilatation without obliteration of the cervix and the extreme degree of bowel obstruction are all points which differ from the description found in books.

Whence came the toxins? From the obstructed bowel, from a mild infection of the retained menses, or were they a normal constituent of the menses or a decomposition product of a normal constituent? The bowel did not seem to be the source. It was well emptied on the previous day; after relief to the condition had been afforded, they were again emptied, without much effect on temperature or pulse. It is difficult to believe that the toxins were the products of infection, as the symptoms cleared up in two days, after simply evacuating the fluid and putting the patient in the Fowler position to facilitate drainage. This leaves us only the menses as the probable source of the toxins and suggests two questions: Is the menstrual discharge of the nature of an excretion containing toxins? Or were the toxins produced by decomposition?

Although I make bold to ask these questions, I will not presume even to attempt to answer them.

I regret exceedingly that I had emptied out the fluid before I thought how interesting a complete examination of it would be.

One other consideration seems to call for reference. The thin, central area found in the hymen would seem to favour the view that the hymen is developed from the end of the solid fused Müllerian ducts, as opposed to the view that it is a later growth of the vaginal mucosa. According to the former idea, the adult form would be attained by a process of absorption beginning at the point further from the effective blood supply. If we accept the latter view, that a fold of mucosa grows up from the anal segment of the vagina, then the thin spot would be found at the pubic boundary of the membrane, the latest and least well-developed area.

I wish to express thanks to Dr. Franklin Richards for assistance and suggestions.

## Reviews.

### SURGERY.

SOME months ago the tenth edition of the "Manual of Surgery," by Rose and Carless<sup>1</sup> appeared and we are only too pleased to add the usual mead of sincere praise which has accompanied the appearance of each edition. The war has intervened between the last two editions and the author has not been diffident, we are glad to say, in using the material provided by war experience. The Director-General of Medical Services has been very helpful in allowing the use of the crystallized knowledge of the army medical service. Thus, there is a short, but efficient mention of transfusion of blood. The Indian summer of popularity rightly enjoyed by Thomas's splints in both military and civil practice is well illustrated and commented upon. No less than twenty-four separate references to Thomas's splint are to be found in this most excellent text-book. It is to be remembered that much of the present high efficiency in the treatment of compound fractures of the femur is due in the first place to the use of Thomas's splint and in the second to the very good work, team work, done in war hospitals devoted to fractured thighs alone. This splint, which, of course, can be bent, is as useful in fractures of the lower leg as it is in those of the thigh. Jones's splint for the wrist is not mentioned, though its excellence is great.

In regard to the treatment of fractured patella, possibly undue space is taken up with the description of subcutane-

<sup>1</sup> "A Manual of Surgery (Rose and Carless) for Students and Practitioners," by Albert Carless, C.B.E., M.B., M.S., F.R.C.S.; Tenth Edition, 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 1574, with 33 plates and 614 figures in the text. Price: 30s. net.

ous methods of wiring and no mention is made of the single method by open operation, which has none of the disadvantages of tunnelling the bone with a drill and is, in the opinion of many experienced surgeons, the best means of treating fractured patella. An excellent description of the cases of displacement of the semilunar cartilages by violence is given, but no mention is made of those cases in which disability occurs, primarily due to laxity of the ligaments of the joint and in which the semilunar cartilages may be displaced eventually by a very moderate amount of violence.

Hydatid disease is always a very difficult subject to handle in a condensed manner, because of the many exceptions which exist to the usually received dictum that it is a painless, fluctuating, comparatively innocuous tumour. The tumour is only occasionally fluctuant, the tension being too great for fluctuation to be elicited. The use of the word ectocyst for adventitia must always lead to some mental obfuscation in the reader who is not familiar with hydatid diseases. Under the heading of eosinophilia no mention is made of the importance of repeated blood examinations being made before eosinophilia can be said not to be present. The complement test of hydatid is too recent for inclusion in the book.

The chapter on hernia is very good, though it seems almost unnecessary to mention Bank's, McEwen's and Halstead's operations for radical cure in these days. The same is also the case in the portion of the book devoted to amputations; operations, some obsolete and some obsolescent, are described which might well be omitted.

It is, however, a book of which British surgery may be proud and it is certainly the most popular and most generally useful book of its kind.

#### STRABISMUS.

WHATEVER views one may have on the subject, Mr. Worth's book on squint is a most interesting and stimulating work. It is well written, the style is lucid and pleasing and it is condensed without being dull. There runs through it a naive dogmatism and "cocksureness" which, however, fails to be offensive. The truth is that we must take seriously the matured opinions of a man who has treated so many thousands of squint cases, who has studied them as probably no other man has and who is justly famous for the excellence of his results.

The earlier chapters deal with the nature and aetiology of the disease. Discussing the latter, the author rightly discards Donder's theory, which fails to explain many of the phenomena, and calls into action an invention of his own, which he names the "fusion faculty." He takes pains to prove that the fusion faculty is quite a different thing from the function of binocular vision, but, entertaining as the argument is, it is unconvincing. "The essential cause of squint," he says, "is a defect of the fusion faculty." This does not appear to us to bring the cause of strabismus much nearer; it is a begging of the question; he might just as well have said the cause of squint is a defect in the power of using both eyes together.

Mr. Worth's treatment of squint is a counsel of perfection; it gives an ideal at which to aim and practical assistance in attaining the ideal. His treatment consists in wearing correction, atropine in the straight eye, training the fusion faculty by means of the amblyoscope and advancement of the necessary muscle. We are indebted to him for his urgent advocacy of early treatment, in the first few months of life, if necessary, and for the sound practice of using atropine in the straight eye only. On the subject of fusion training, opinions will be divided. The excellent results he claims may appear startling to some of us, perhaps because, being influenced by practical difficulties, we have never conscientiously tried his methods. It may be mentioned, in passing, that this is a field for clinical research by the younger men, who can give time and enthusiasm to it. But, even according to the author's own showing, there are serious limitations to the value of fusion training, for he admits that it is useless probably after six and certainly after seven years of age and in cases of true alternating squint.

<sup>1</sup> "Squint: Its Causes, Pathology and Treatment," by Claud Worth, F.R.C.S.: 1921. London: Baillière, Tindall & Cox; Demy 8vo., pp. 242, illustrated by 42 figures. Price: 12s. 6d. net.

Mr. Worth's operative treatment is confined strictly to advancement. He seems to have a horror of tenotomy, either partial or complete. All operators will not agree with him here and many will admit that their advancement operations require the additional help of a tenotomy or tendon lengthening. The author's operation is a good one and well described. The point he emphasizes is the need to take a distinct grip of the sclera with the suture.

Many other points offer themselves for discussion; one, for example, is the question of the amblyopia. Is it truly the result of the squint, or is it, as is taught by Treacher Collins, the underlying cause? The heterophorias are described concisely and treatment advised with sound judgement. The fifth edition is practically unaltered.

#### Notes on Books.

##### BUSH FLOWER FANCIES.

ANGUS & ROBERTSON, LIMITED, recognize that THE MEDICAL JOURNAL OF AUSTRALIA has a corner for the picturesque among the mass of sombre and morbid material that usually fills its pages. It would seem as if the medical profession were noted for its special sympathy for babies and children and for those works of art that appeal to the very young. Each year we have received a copy of Miss May Gibbs's fascinating picture poems of Australian flowers and each year we have been impelled to commend to our readers these captivating and clever fantasies of the bush. This year the chief place is given to the flannel flower.<sup>1</sup> Miss Gibbs allows her imagination to run riot and introduces to us this beautiful mountain flower transformed in the most natural manner possible into the prettiest babies. Christmas bells lend themselves to dainty treatment in a similar manner. The yellow pea flowers and the native fuchsias are of surpassing charm in their changed form, while wondrous fungi seem familiar in their fairy shapes. Miss Gibbs selects the Christmas bell babies for deeds of daring, such as dragon-flying and real leap-frog. There are two of these irresistible pictures in colours and eleven in black and white. And the simple legend attached to each is a mine of daintiness. A copy of this delight should find its way into the library of every one of our readers.

#### Medical Matters in Parliament.

##### MILK SUPPLY.

THE PREMIER OF VICTORIA, THE HONOURABLE H. S. W. LAWSON, was asked a question in the Legislative Assembly on October 26, 1921, concerning a resolution of the conference of the Municipal Association, approving of the municipalization of the milk supply. He stated that the Government proposed to introduce a Bill during the present session dealing with the question of milk supply. It was not usual to anticipate the introduction of the measure by disclosing its provisions.

##### HOSPITALS FOR THE INSANE.

IN the Legislative Assembly of Western Australia, Mr. E. B. Johnston asked the Premier on October 12, 1921: (1) On what grounds Dr. Ernest Jones had been appointed Chairman of the Royal Commission to inquire into the administration of the Claremont Hospital for the Insane? (2) Was the Government aware that similar charges of maladministration had been made against the institution controlled by Dr. Ernest Jones in Victoria? (3) Would the Government replace Dr. Ernest Jones by an independent commissioner? (4) Was it the intention of the Government to reciprocate with the Government of Victoria by permitting Dr. Anderson to visit that State for the purpose of reporting on the charges made against Dr. Ernest Jones's administration? The Premier replied: (1) General fitness. (2) No; but all lunacy administration was naturally the subject of some complaint. (3) No. (4) Consideration might be deferred till the request was made.

<sup>1</sup> "Flannel Flowers and Other Bush Babies," by May Gibbs; 1921. Sydney: Angus & Robertson, Limited; Demy 8vo., pp. 24, profusely illustrated. Price: 2s. net.

## The Medical Journal of Australia

SATURDAY, NOVEMBER 5, 1921.

### The Spreading Epidemic.

FROM the Bulletins issued by the Federal and Queensland State Departments of Health, we are learning the disquieting news that the epidemic of plague is gradually getting out of hand. Week by week the boundaries of the known area of infection are extending. Not only is the number of human infections increasing, but the foci of infection appear to be spreading through the medium of rodents in many widely separated districts of Queensland. Epidemics of plague usually set in slowly and the mortality increases as the epidemic curve sweeps upwards toward its crest. Although the number of human infections notified up to the present time is small, the mortality is high and this fact adds seriousness to the prospect. Unless very energetic steps are taken to modify the natural spread of the infection, we may soon be able to anticipate the type of epidemic which awaits the Australian community. The criteria on which an estimate of the future course of the epidemic may be based, include curves for each district and for the whole State of the number of infected rats discovered and curves for each district and for the whole State of the number of human beings struck down by the disease. Once the general contour of these curves can be distinguished, their continuation can be interpolated on the assumption that there will be a steady, proportionate acceleration, reaching its zenith about the month of April and declining at first gradually and later more rapidly. Although it is still too early to attempt such a prediction, sufficient information is available to justify the conclusion that, unless the course of the epidemic is materially altered by prophylactic measures, a very serious outbreak will occur. The facts may be summarized briefly.

On August 23, 1921, a man died in Brisbane from an affection which aroused suspicion of plague infection. Six days later it was determined that

the infection was that of plague. Before this case was notified, arrangements were made for an active crusade against rodents in North and South Brisbane. This statement, which we cull from the report supplied to us by the Commissioner of Health, would seem to indicate that the rat campaign began after the death of the man, but before the guinea-pig inoculation test had been completed. We are further informed that the killing of rats had been neglected for some years by the "responsible authorities." Australia, and especially Queensland, is constantly exposed to the peril of invasion by plague-infected rats and by persons suffering from the disease. The cordon is drawn as closely as possible around the ships arriving from countries where plague is known to exist. In spite of this, the risk of the infection spreading from ship rats to land rats is very considerable. All hygienists are agreed that quarantine measures, however strict, must be supplemented by a continuous crusade against wharf and land rats. The safety of our ports stands in direct proportion to their freedom from rodents. It may be asked: "Who are the responsible authorities?" The Department of Health is apparently inclined to attribute the blame to the local health authorities. The *Health Acts* provide for the control of sanitary matters, including rat destruction and the like, by the local authorities. But the body responsible for the safeguarding of the health of the community is, or should be, the Department of Health. In other words, the Department is vested with powers to administer the existing legislation.

If the experts find that the health laws are inadequate to insure the safety of the community, it becomes their duty to demand such amendments of the law as may be necessary to give them full power to deal with the prophylaxis of disease. If the Minister ignores the demands of his medical advisers, the former must shoulder the whole responsibility for any consequences of his inactivity. As long as it is left to a hundred and one local authorities to obey or to defy the health laws, as they will, so long shall we continue to walk along the edge of a precipice. The Department has the onus of compelling the local authorities to control their areas effectively or of assuming the control itself. When we are falling over the precipice, we shall find little



solace from the excuse that someone else has failed to erect a proper fencing.

The next fact of importance is that rats infected with *Bacillus pestis* were found in various districts of Brisbane during the following three weeks. Of even greater importance is the discovery of infected rats on board the *Wyrcema* on her arrival in Sydney on September 19, 1921. This vessel had travelled down the coast of Queensland from the northern ports. Subsequent events would seem to indicate that carelessness had been exhibited in the protection of the vessel by means of rat guards during her voyage northwards. Whether the first rat infection occurred at Brisbane or not is open to question, but this surmise is certainly a reasonable one. Within a short time infected rats were found in Townsville and Cairns. One after another fresh foci of infection have appeared and it would seem that the infected rat has already a long start from his pursuers.

The handling of the prophylactic measures should be left to medical experts in hygiene and epidemiology. The amateur hygienist, whether he be Minister or permanent official, should be relieved of all responsibility for the time being and of all power to interfere. The situation requires the direction of a strong man with experience and scientific training. Even at this relatively late stage, it is not impossible to gain a complete mastery over the menace, provided that a definite plan is evolved and carried through without fear and even with something approaching ruthlessness. There is no need for exaggerated alarm, although we expect that, unless the scene changes completely, a wide-spread scare will seize the community during the early months of next year. Every man should be forced to adopt the prescribed measures for the destruction of any rats that may be on his premises or that may roam on his lands. No time should be wasted in discussing questions of responsibility, but every expedient should be employed to compel each citizen, whether in private or in public life, to perform the tasks rendered necessary by this danger. The public must be told plainly that plague is a preventible disease and that its ætiology is understood. We are admittedly powerless to handle an epidemic of influenza effectively, because we have yet to discover its real cause and the actual nature of the disease. At

present, we cannot blame any health authority for not preventing an epidemic of influenza. In the case of plague, it is different. Without the rat or other rodent, there will be no epidemic. In the next place, the public must be told that bubonic and pneumonic plague are one and the same disease. If the plague bacilli find entrance into the lungs and utilize these organs as their headquarters, the case is called pneumonic. The human patient, in these circumstances, will be liable to spread the disease without the intermediation of the flea. On the other hand, the more usual site of invasion is the lymphatic system. When the lymphatic glands, spleen and possibly liver are invaded, the patient will pass the infection on through a vector, the flea, to the intermediary host, the rat. In other words, in bubonic plague prophylactic measures must be directed chiefly against the rat and its fleas.

The medical profession in Queensland is guiding the Department in connexion with the enlightenment of the public on these matters. If their endeavours are supported by a well-directed campaign of rat killing, we may yet be spared a dismal new year. The direction of the control, however, must be in the hands of experts and not of laymen.

#### INTERNATIONALIZING MEDICINE.

It is a platitude that medicine knows no nations. This does not imply that the members of the medical profession need to lose their individual nationality, nor that medical institutions in any one country should open its doors indiscriminately to foreigners. But it does mean that the medical profession the world over has the same ideals, the same objectives and, broadly speaking, the same methods. All knowledge gained is common property, imparted freely for the benefit of mankind, irrespective of nation. All races participate equally when a discovery of importance to medical science is made. The international character of medicine, however, has its limits and barriers beyond which it is not easy to pass. Movements which result in the expansion of this conception of community in the medical world, must be greeted with the utmost heartiness, provided that the principles on which they are based, are of a lasting type, strong enough to resist even such world cataclysms as the war of nations.



A great American citizen amassed an enormous fortune, not only in his own country, but in the markets of almost every commercial country of the world. The success of John D. Rockefeller has become a by-word. Success, spelling wealth, however, was for this man a means to an end. Having the disposal of millions of his own money, he surveyed the world with close scrutiny, with the object of discovering in what way this immense fortune could be used to produce the greatest amount of benefit to mankind. With him there was no question of a national movement. He saw that he had in his power the means of starting a campaign which would eventually reach the extreme ends of the world and become developed into an untold blessing to humanity. The Rockefeller Foundation, built up out of the success of an ultra-successful business man, adopted the slogan at its inception: "To promote the well-being of mankind throughout the world."

We have dealt on many occasions with the activities of the International Health Board of the Rockefeller Foundation in the endeavour to combat hookworm disease in all countries where it constitutes a menace to health. The selection of this disease for the purpose of a grand demonstration of the possibilities of a well-planned campaign of preventive medicine was an inspiration of genius. But it must be understood that this constitutes but a part of the programme of this extraordinary organization. Akin to it is the malaria control work, which has already assumed considerable proportions and which promises to result in a metamorphosis of some of the most heavily infected districts of America and other continents. The Foundation has lent aid in the eradication of yellow fever with seeming success. It has inaugurated a tuberculosis crusade on promising lines, extending throughout France during the late war period and since, until the French have been enabled to continue the good work without foreign assistance. It has taken up public health work in Czecho-Slovakia, has helped to feed the hungry babes in starving Hungary and Austria and has started the plan of systematizing industrial hygiene on modern lines east and west.

The expert workers of the International Health Board have recognized that the training of medical

students has proceeded along wrong lines in the past, in that prevention of disease and original research have been placed under the curb, while the doctor has been educated with the idea that his main function was to endeavour to cure manifest disease, admittedly a hopeless task in the majority of instances.

From the review of the work of the Rockefeller Foundation in 1920, we learn how the sum of \$5,000,000 has been granted to the Canadian medical schools for new buildings and modern equipment, after the plans for the development of these schools had been discussed and carefully formulated. The Foundation recognized in the establishment of clinical units under whole-time teachers in our London medical schools a sign of real reform. The Foundation offered aid to University College to develop this idea in such a manner that the greatest benefit might be expected to accrue. On the condition that the College faculty and the Hospital staff would co-operate, by the appointment of at least four professors each for the reformed institution, the Foundation has ear-marked \$5,000,000 to be expended on an institute of anatomy, a lying-in pavilion for 60 patients, a home for nurses, a home for resident medical officers and so forth, together with modern equipment for laboratories, clinics and special departments. This discriminative assistance to one of the greatest medical schools of our great Empire is a very significant fact. The medical profession in England, having given indications of merit and of an earnest desire to forge ahead on sound principles, has secured the confidence of the International Health Board. The aid has been accepted in the same humane spirit as it has been offered. It is unnecessary to refer in detail to the assistance given to the establishment of *La Fondation Reine Elisabeth*, a research institution associated with a hospital of 1,000 beds in Brussels, to other medical education centres in Belgium and to similar work in China.

Some day we may earn the same confidence of the International Health Board in Australia. Already experts from this wonderful organization are working steadily for the benefit of the Australian community hand in hand with our own hygienists.

## THE NATURE OF ANAPHYLAXIS.

ATTENTION has been called on several occasions in these columns to the tendency of clinicians and others to apply the term anaphylaxis to any condition bearing a superficial resemblance to the true anaphylactic shock. Since this subject possesses great importance in clinical medicine, it is essential that the term should be clearly defined and that its use should be limited to phenomena of a special biological nature. It will be remembered that Charles Richet introduced the term to indicate the peculiar augmentation of toxicity of extracts of mussels and of the tentacles of certain actines. Rosenau and Anderson described the hypersensibility produced in guinea-pigs by the injection of small quantities of horse serum as anaphylaxis. In the early days anaphylaxis was regarded as a special form of immunity response, the specific antigen giving rise to an increased sensibility instead of a lessened response. All investigators up to the year 1913 regarded the process as an antigen-antibody reaction. Friedberger enunciated the hypothesis that the introduction of a small quantity of a protein, itself of low toxicity, led to the production of an antibody which, when brought into contact with the original protein, formed a toxic compound. He called this hypothetical body anaphylatoxin. The complement of the serum was supposed to exert a proteolytic action through the antibody on the antigen. This view, either in its original form or modified to a slight extent, gained support from a large variety of observations. Perhaps the most important contributory evidence of the doctrine was that the blood serum of a hypersensitized animal, when mixed *in vitro* with the antigen, gave rise to the same toxic symptoms in the unprepared animal as the antigen produced in the hypersensitized animal. It was noted, however, that the symptoms and death occurred at times after an interval and at times immediately after the injection of the antigen-antibody mixture. Another highly significant fact was elicited, namely, that the anaphylactic shock induced was exclusively by an antigenic substance.

At the time of the last International Congress of Medicine, held in London in 1913, the majority of workers accepted this view, although it was recognized that the actual mechanism of anaphylaxis had not been completely discovered. At that gathering Professor Jules Bordet announced that he had adduced evidence to prove that anaphylaxis did not depend on the proteolytic ferments postulated in the alleged anaphylatoxin of Friedberger. He reported that a suspension of agar-agar possessed the power of rendering blood serum toxic to guinea-pigs and that the symptoms were identical with true anaphylaxis. He found that when the agar was brought into contact with serum that had previously been heated, the serum remained harmless. Friedberger and others had shown that the serum of a sensitized animal, if heated before admixture with the antigen, did not give rise to the symptoms of anaphylaxis in a normal guinea-pig. At first these observations of Professor Bordet did not influence the views concerning the mode of production

of anaphylaxis. The war then diverted the attention of immunologists to matters of more immediate importance. The possibility of a bio-physical, rather than a bio-chemical, explanation of the phenomenon had been mooted, but it was not further considered by the majority of those interested in this study.

Professor Bordet has now continued his story and has added several additional scraps of evidence in support of his contention that anaphylaxis is dependent on the adsorption of some unidentified constituent of serum.<sup>1</sup> In the first place, he claims that, while the serum does not acquire a toxic property if mixed with agar after it has been heated, the toxicity of fresh serum treated with agar is not destroyed by heat nor by keeping. The main observations were confirmed by several well-known workers. Nathan showed that the agar could be replaced by starch; Ropaczewski claimed that sodium pectate acted in a similar manner. The fact that starch can change serum from a harmless to a toxic condition disposed at once the contention that the agar contained some protein constituent which became liberated by the enzymic action of complement. Professor Bordet showed, further, that starch liquefied by diastase is devoid of the property of changing the serum. It is well known that diastase has no action of protein. Moreover, he succeeded in rendering serum toxic with purified agar which did not contain any demonstrable nitrogen. He holds that agar and a few other colloids or suspended particles adsorb from the serum some normal constituent and that the symptoms of anaphylaxis are not due to the proteolytic effect of complement on the antigen. He also claims that the antigen-antibody complex has a similar power of adsorption. This phenomenon apparently occurs in the course of immunity processes, but he regards it as an accident and not a reversal of the antigen-antibody reaction. He argues on the evidence of direct observations that the toxicity of the serum-agar mixture is not caused by the removal of an anti-tryptic agent and the consequent disintegration of an albuminous constituent of the serum. It is not caused by thrombin. He contends that the serum rendered toxic by the addition of agar is identical with anaphylatoxin. In support of this view, he records experiments which go to show that a phenomenon similar to anti-anaphylaxis can be produced by means of agar. A small amount of the agar suspension, when injected intravenously into guinea-pigs, gives rise to the symptoms of anaphylaxis. If a sub-lethal dose be injected, the animal recovers from the shock. On the following day a full lethal dose can be injected without symptoms occurring. The serum of these guinea-pigs was found to have lost the power of becoming toxic when treated with agar suspension. Professor Bordet calls attention to the similarity of these findings to those of the anti-anaphylactic phenomena in relation to red blood corpuscles.

Every worker who has turned his attention to the subject of anaphylaxis, has been dismayed at the

<sup>1</sup> Bulletin of the Johns Hopkins Hospital, August, 1921.

complexity of the process. Professor Bordet has added some fresh and significant facts to those already collected. It is probable that the process of adsorption is involved in the phenomenon, but it would seem that much more evidence is needed to justify the adoption of the hypothesis of a simple physical explanation of anaphylaxis. Professor Bordet has performed a service in demonstrating afresh the necessity of restricting the term anaphylaxis to processes incidental to immunity phenomena, which depend on a changed biological response to a naturally harmless substance.

#### AUTHORS AND SUFFERERS.

SIR HUMPHRY ROLLESTON selected an interesting subject when he agreed to deliver a lecture recently to the neophytes of the St. Mary's Hospital Medical Society.<sup>1</sup> He spoke of medical men who suffered from the diseases which they described. Sir William Gull, who described, with H. G. Sutton, the condition known as arterio-capillary fibrosis (their monograph, which attacked the prevailing idea that chronic nephritis was a primary disease of the kidney, was published in 1872), died of cerebral hæmorrhage. Von Mikulicz died of carcinoma of the stomach. G. R. Fowler, the originator of the Fowler position in surgery, died of appendicitis after writing his well-known "Treatise on the Appendix." Trousseau, one of the greatest figures in the history of medicine, had emphasized his observation that if thrombosis occurred in a patient suffering from disease of the stomach, the condition was one of carcinoma. He applied this to his own case and predicted his death from carcinoma when he noticed a patch of phlebitis appear on his leg in the New Year of 1867. Sydenham, a life-long martyr to gout, wrote his celebrated "*Tractatus de Podagra et Hydrope*" in 1685. Sir A. B. Garrod wrote in 1876 that, unlike Sydenham, he could not describe the sensations of gout from personal experience. A few years later he was attacked by this disease as though by way of vengeance. Laennec, with whose name the physical diagnosis of pulmonary tuberculosis is associated, died of that disease.

Many medical men have succumbed to infection from the disease at which they worked in clinic or in laboratory. One of these, not mentioned by Sir Humphry, was the late Thomas Carlyle Parkinson, a young Australian, who died at the Lister Institute from pneumonic plague while engaged in research upon plague. One of the most heroic instances of martyrdom to medical research was the death of J. W. Lazear, who deliberately allowed mosquitoes to bite him and by his death from yellow fever proved the mode of transmission of that disease. W. Myers, an Englishman, died under similar circumstances. Other instances of voluntary infection without fatal consequences are that of the younger Manson, who proved on his own person the direct transmission of malaria to man by the bite of infected mosquitoes; that of Cory, of St. Thomas's Hospital, who infected himself with syphilis by fre-

quent self-vaccination with vaccine lymph from infants suffering from congenital syphilis; and that of John Hunter, who developed syphilis after inoculating himself with pus from a patient suffering from gonorrhœa and thenceforward believed that gonorrhœa and syphilis were two manifestations of the one disease. Hunter died of *angina pectoris* and Sir Humphry Rolleston believes that syphilitic aortitis was the causative lesion. L. P. Mark wrote a comparatively recent book, which he called "*Acromegaly: A Personal Experience*." Acromegaly was first described by Pierre Marie, the great neurologist. Marie picked out Mark at a medical social gathering in London and made the diagnosis. As Sir Humphry puts it, for some fifteen to twenty years, Mark, when he looked each day into a looking-glass to shave or to brush his hair, had a typical acromegalic staring him in the face. Yet the physician had failed to recognize himself! Julius Thomson was the first to attract attention to the condition *myotonia congenita*, which was an hereditary disease in his own family. Percival Pott fell from a horse in 1756 and sustained the fracture which has immortalized his name. He is, of course, also remembered for his description of tuberculous caries of the spine. Numerous medical sufferers from asthma, migraine, gout, tuberculosis, nephritis and heart disease of various kinds have described their symptoms either frankly or under the guise of a fictitious patient whom they treated. It will come as a relief to those who are interested in the more deadly diseases, to learn that Bright, Addison and Hodgkin, the three giants of Guy's, did not die from the diseases with which their names are associated. Bright died of aortic stenosis, Addison killed himself by jumping from a window while insane at the age of 67 and Hodgkin died of dysentery at the age of 68. Joseph Ignatius Guillotin, who proved during the Revolution that it was much easier to amputate a head than to put it on again, was spared the indignity of dying by his own invention.

The young students, who had the privilege of hearing Sir Humphry Rolleston, must have enjoyed the historic interest of his delightful address. But it would be interesting to surmise how many agreed with the lecturer's quotation of the "comforting last word" of William Hunter: "If I had strength enough to hold a pen, I would write how easy and pleasant a thing it is to die."

#### THE ZOOLOGICAL POSITION OF MAN.

PROFESSOR F. WOOD JONES will deliver a series of four lectures on "The Recent Views Concerning the Zoological Position of Man" at the Union Hall of the University of Sydney on November 15, 17, 22 and 24, 1921. The lectures have been arranged by the Sydney University Extension Board. The medical profession in Sydney will grasp the occasion of Professor Wood Jones's first visit from Adelaide and will fill the Union Hall to their own advantage. Originality in thought and inspiration in teaching are qualities of too rare a nature to justify their possessor in limiting his sphere of activity.

<sup>1</sup> *The Lancet*, April 16, 1921.



## Abstracts from Current Medical Literature.

### ORTHOPÆDIC SURGERY.

#### (202) The Non-Operative Treatment of Scoliosis.

WALTER TRUSLOW (*Journal of Orthopædic Surgery*, May, 1921) states that there is no known method of eradicating a structural scoliosis. He remarks that the aims of treatment are to stop the deforming processes, to lessen the existing deformity and to prevent the return of the deformity. Every case is an individual study, but, as a rule, the non-operative treatment of structural scoliosis involves the use of corrective plaster of Paris jackets, with pressure paddings, and specific intensive exercises in conjunction with a retaining apparatus or corset. Some system of measuring the deformity and of recording progress is necessary. The author emphasizes the necessity for measuring the deviation of the spine, the relative carriage of the shoulders and the relation of the lean of the upper trunk to a spinal perpendicular when the patient is standing. It is also necessary to measure the deviation and rotation of the spine when the patient lies in the prone position. To effect these movements a strip of adhesive plaster is placed over the spinous processes from the seventh cervical to the first sacral regions and the position of the spinous processes is marked on the plaster. The levels of the angles of the scapula are projected and marked on the margins of the plaster. A plumb line, the lower end of which is in the plane of the natal cleft, shows the deviation of the cervical spine from the perpendicular. When the plaster is removed from the patient's back, a line is drawn connecting the cervical spines with the first sacral spine. Measurements from this line to the spinous processes indicate the amount of deviation. Records of bony changes are made, the patient being placed in a standard prone position upon a table. Adhesive plaster is used to mark the position of the spinous processes and the author measures rotation with his rotatometer, which is really a spirit level with a recording apparatus for the measurement of the angle of fall between the two sides of the back. Details of the application of plaster jackets are given and various exercises are prescribed. It is arranged that all exercises should be done with the least possible apparatus, so that the patient may do them at home. Corrective plaster jackets lessen the deformity more rapidly than exercise or the wearing of a brace. The intolerance of the skin to pressure and the patient's aversion to the wearing of a jacket limits the duration of the period of application. A retentive brace, although it is of no value to correct the deformity, will assist in preventing an exaggeration of the condition. Artificial support must gradually give way to natural muscular sup-

port. Internal splinting by operative bone fixation may be also necessary in severe paralytic cases.

#### (203) Technique of Nerve Surgery.

K. WINFIELD NEY claims to have had a particularly favourable opportunity for studying peripheral nerve surgery and summarizes his experience in the form of a system of procedure and technique (*Annals of Surgery*, July, 1921). Local anaesthesia supplanted all other forms of anaesthesia in his clinic. A 1% solution of novocain containing 1 c.cm. of a 1 in 1,000 solution of adrenalin chloride in each 30 c.cm. of solution, was injected into the area of operation. Elimination of the constant oozing encountered in scar tissue dissections followed the use of this anaesthetic. Torsion is a serious obstacle to the success of nerve surgery and may be minimized by the use of the following methods: (i.) identification sutures, placed in both segments of the nerve proximal and distal to the lesion; (ii.) funicular or bundle matching; (iii.) forceps identification (mosquito forceps are placed on either side of the nerve as it is lifted from its bed); (iv.) anatomical markings, e.g., longitudinal striations in the course of blood vessels. This last method will often reveal torsion. Nerve defects are treated by primary stretching, by flexion relaxation, by transposition, by a two-stage operation or by grafts. Flexion relaxation is the most satisfactory and grafting the most unsatisfactory manoeuvre. When suture has been done, a suitable bed for the nerve is found in an adjacent inter-muscular plane or in the subcutaneous fat. Scar tissue formation may be diminished by perfect hæmostasis, a minimum of tissue trauma and aseptic technique. The actual suturing is accomplished with fine silk epi-neural sutures, which penetrate the nerve sheath and to a slight degree the peri-funicular connective tissue. Neurolysis is advised when palpation of a nerve trunk reveals induration. The nerve bundles are separated and protected by a fat transplant. One case of ischæmic paralysis treated by neurolysis yielded an excellent result.

#### (204) The Operative Treatment of Scoliosis.

ROYAL WHITMAN (*Journal of Orthopædic Surgery*, July, 1921) states that there are certain cases of scoliosis in which the deformity resists the usual methods of correction by means of plaster of Paris jackets. Instead of attempting to correct these with the spine flexed, he proposes to reduce part of the deformity by keeping the patient prone on a convex stretcher. This increases the height and improves the appearance of the patient. A final step in the treatment is an operation to ankylose the spine and form a barrier to flexion. By effacing the spinous processes the surgeon reduces the deformity and the removal of the muscular attachment allows a further correction by subsequent fixation on the frame during the period of consolidation. The operation for fixation

which the author favours, is that proposed by Forbes. Large sections of bone are prized from the laminae, so that the interval between them may be bridged and the spinous processes, split into two or more segments, are flattened out laterally to make a wide area for ankylosis. The purpose of this treatment is to conceal the deformity by effacing its most offensive manifestation and to check its further progress. Twelve patients have already undergone treatment and, although the time is too short to report final results, the immediate effects have been very satisfactory to the patients and the indications are that the improvement will be permanent.

#### (205) Treatment of Fractures of the Femoral Diaphysis in Children.

KELLOG SPEED (*Surgery, Gynecology and Obstetrics*, June, 1921) presents an analysis of 67 cases of fracture of the femoral diaphysis in children under twelve years of age. Various forms of treatment were used. In small children under the age of three years overhead vertical extension is recommended, but after that age continuous suspension traction by Thomas's splint and overhead frame appears to yield better results. An important point in this form of treatment is the facility with which X-ray examination of the femur may be made without moving the patient. A skiagram should be taken within 48 hours of the commencement of extension, so that malposition may be detected and corrected before callus is formed. The author also emphasizes the importance of using a walking caliper splint, so that the reductions gained by treatment may be maintained and the soft callus protected from the strain of weight-bearing and muscular action. When traction fails to give a satisfactory result, autogenous bone intra-medullary pegs are an excellent means of treatment.

#### (206) Recent Fractures of the Os Calcis.

DAVID C. STRAUSS (*Journal of the American Medical Association*, July 16, 1921) describes a method of treating recent fractures of the *os calcis*. As a rule, the two deformities to be corrected are upward displacement of the posterior fragment and the flattening of the longitudinal arch of the foot. The tone of the calf muscles tends to perpetuate the first deformity and is overcome by tenotomy of the *tendo Achillis*. A Steinman pin is then passed immediately in front of the tendon and fixed to a caliper. This traction is made to maintain reduction of the posterior portion of the *os calcis*, while the fore part of the foot is plantar-flexed and adducted. The Steinman pins are removed after the foot has been encased in plaster of Paris. Immobilization is continued for four weeks, but weight-bearing is not allowed till ten weeks have elapsed. An arch support is then worn and the patient walks with crutches.

## MORPHOLOGY.

## (207) Birth Mortality.

HELEN DEAN KING (*Anatomical Record*, March 20, 1921) has published a comparative study of birth mortality in the albino rat and man. The paper is accompanied by a fairly extensive bibliography, more particularly of birth statistics for man. Of 31,670 new-born albino rats, 415, or 1.3%, were still-born. If allowance is made for various errors, the birth mortality in the rat is not greater than 2%. In regard to man, Norris found that of 447,019,579 births recorded from the years 1751 to 1903, still-births totalled 13,635,986, or 3.04%. The most accurate recent statistics available correspond closely to this percentage, showing a mortality of about 4%. The sex ratio in the total births of rabbits was found to be 107 males to every 100 females. The normal sex ratio was defined as the sex ratio of all the offspring of a considerable number of females kept under favourable conditions of environment and of nutrition during the entire period of their reproductive activity. The sex ratio of the still-born alone in the albino rat is 129.3 males to every 100 females, a remarkable deviation from the sex ratio of the total births. In man the sex ratio of the total number of infants born is 108 males to 100 females, while, when limited to living infants, this ratio is 105.5 males to 100 females. In regard to the still-born, the ratio is 130 to 140 boys to 100 girls. Moreover, the excess of still-born males rises the earlier in pregnancy the fetus dies. Seasonal variations in the proportion of still-births to living were found in the rat. Available statistics in man would appear to show that there is no such seasonal effect on the birth mortality in man. As regards post-natal mortality, this is found to be 2.3% in the rat and about 5% in man for periods of three days and one month respectively after birth. In man, it is the male infant that suffers most, from the same causes apparently which operate in the production of still-births. Factors responsible for a considerable proportion of the still-births among human offspring, such as faulty implantation of the ovum, mechanical obstructions to birth, large size of the fetus and possibly infectious disease, apparently affect the birth mortality in the rat very little. The main factor directly responsible for still-births in the rat would appear to be malnutrition. This may occur either in immature female rats or in those approaching the end of the reproductive period. Moreover, when the female is already lactating, the nutrition of the fetus *in utero* is affected. Eliminating certain causes which operate in man but to a very small extent, if at all, in the rat, the underlying cause of most cases of "congenital debility" leading to still-births, both in man and the rat, is malnutrition of the fetus. The author discusses in some detail the various hypotheses put forward to explain the

greater mortality of the male fetus. Dising suggested that the greater average weight and, as a result, the increased nutrition required by the male fetus, were sufficient to explain the greater mortality. Lillie suggests that there is greater disturbance in the development of the male fetus, owing to the necessary establishment of an equilibrium between the sex hormones of the male fetus and the sex hormones of the mother. His hypothesis was based on a study of the "free-martin" in cattle. From a study of all the available evidence, the author believes that, both in the rat and in man, the male fetus is intrinsically weaker than the female. She supports the hypothesis that the difference in the constitutional vigour of the sexes has its basis in the different chromatin structure of the male and female zygote, the female zygote possessing one more chromosome than the male.

## (208) Diabetes Insipidus as a Hypopituitary Syndrome.

G. MARANON (*Endocrinology*, March, 1921) has described his experimental experience in regard to *diabetes insipidus*. As a result of the careful study of 32 cases, the author is convinced that *diabetes insipidus* is a result of insufficiency of the posterior lobe of the hypophysis. The clinical argument is decisively in favour of this theory, since, in the great majority of cases of the disease, clinical examination shows the existence of symptoms of hypophyseal lesions. Moreover, an analysis of the symptoms almost invariably shows a functional insufficiency of the posterior lobe (*pars intermedia*) of the gland, which is either primary or secondary to lesions of the anterior lobe. Five cases are described of the typical Fröhlich syndrome (*dystrophia adiposo-genitalis*), now definitely considered as the clinical expression of deficient functioning of the posterior lobe of the hypophysis. Three cases of hypophyseal cachexia are quoted. It is remarked, in connexion with a definite fourth case, that, in view of the frequency with which hypophyseal metastases are produced in cancer of the breast and in certain forms of abdominal cancer, it is possible that the cachexia of cancer is hastened in some cases by a marked insufficiency of the posterior lobe of the hypophysis. Five other cases are either examples of pure dwarfism or of dwarfism combined with infantilism. Three cases are examples of hyper-hypophyseal constitution, the patients being actual attenuated acromegals, in whom an apparently enlarged anterior lobe caused compression of the posterior lobe and gave rise to symptoms of deficiency of its secretion. Other cases of various conditions suggest a similar deficiency. The most interesting is a case of gun shot wound dividing the pituitary stem and causing cicatrization of the posterior lobe and the development of Fröhlich's syndrome with polyuria. As an additional factor in favour of this hypothesis, men-

tion is made of the favourable results of hypophyseal opo-therapy, which is the only therapeutic measure which, in a certain and safe manner, suppresses the polyuria. Other conditions marked by polyuria, e.g., *diabetes mellitus* and chronic nephritis, are uninfluenced by treatment with pituitrin. The effect of pituitrin is to reduce the polyuria to a normal limit. Even when doses larger than one cubic centimetre were administered, no diminution below the normal was observed. Hypertension of the cerebrospinal fluid is a constant phenomenon in *diabetes insipidus* and the extraction of a certain quantity diminishes the polyuria in some cases. Stress is laid on the importance of the emotion in the pathogenesis of this disease.

## (209) The Internal Secretion of the Spleen.

N. B. EDDY (*Endocrinology*, July, 1921) has investigated the internal secretion of the spleen. A large number of functions have been assigned to that organ from time to time. The majority of these assigned functions involve the life cycle of the blood corpuscles, but a review of the literature leads to the conclusion that, in all probability, the adult spleen normally contributes no new-formed elements to the blood and that it does not continually remove any significant number of corpuscles from the circulation. Another theory is that the spleen produces an internal secretion which regulates the number of red blood corpuscles, particularly erythrocytes, in the circulating blood. It may stimulate or depress the activity of bone marrow, it may facilitate the fragmentation of old corpuscles, or it may alter the number of corpuscles in active circulation, by altering their distribution. The author has made certain experiments and concludes that the spleen furnishes an internal secretion. His evidence includes (i.) the changes in the erythrocytes after splenectomy, (ii.) the modification of the blood picture in hyperplasia of the spleen, ameliorated in some cases at least by splenectomy, and (iii.) the specific effects on the red blood corpuscles by injection of splenic extract. Nothing is known in regard to the chemical nature of the supposed splenic hormone and it is difficult to formulate a consistent theory of its possible mode of action. The following suggestions, however, are put forward. The chief function of the spleen is the removal from the circulation of the disintegrated erythrocytes. The splenic cells elaborate this material, producing thereby an internal secretion, which is formed from a component of the erythrocyte (either the stroma or the pigment portion). The internal secretion reduces the resistance of all the red blood corpuscles, the effect amounting to actual destruction of the older cells. Finally, the internal secretion, possibly after some modification by the liver, stimulates the erythropoietic function of the bone marrow and is used up in the manufacture of new corpuscles.

## British Medical Association News.

### SCIENTIFIC.

A MEETING of the Western Australian Branch was held at the Repatriation General Hospital, Fremantle, by kind invitation of Dr. BASSETT, on June 15, 1921, Dr. G. W. BARBER, C.B., C.M.G., D.A.O., the President, in the chair.

#### Pseudo-Hypertrophic Paralysis.

Dr. E. C. EAST presented a boy, aged seven years, who was suffering from pseudo-hypertrophic paralysis. Dr. EAST demonstrated all the recognized signs of the condition.

#### Subacute Bacterial Endocarditis.

Dr. D. M. McWHAE, C.M.G., C.B.E., read a paper entitled "Subacute Bacterial Endocarditis" (see page 393).

Dr. BARBER asked Dr. McWhae why the fingers were clubbed in the condition.

Dr. H. J. GRAY stated that it was important to ascertain whether *Streptococcus hemolyticus* could be recovered from the mucus of the throat.

Dr. R. S. MCGREGOR, D.S.O., inquired whether *Streptococcus hemolyticus* could be isolated from the blood in the early stages.

Dr. A. JUETT said that when he was examining ex-soldiers with definite signs of valvular disease of the heart for the Pensions Department, he had met with four men affected with the functional condition spoken of in the service as "D.A.H."

Dr. McWHAE, in reply, stated that the pathogenesis of clubbing of the fingers was not known. In regard to the recovery of *Streptococcus hemolyticus*, he stated that organisms were isolated from the blood in only 50% of cases. The *Streptococcus hemolyticus* was recovered in but few instances. The symptoms were well marked in the late stages of the disease; in the early stages the diagnosis was often very difficult.

#### General Paralysis of the Insane.

Dr. J. A. BISSET exhibited several patients. The first was suffering from general paralysis of the insane. The blood serum of this patient yielded a strongly positive Wassermann reaction. The second patient was affected with bronchiectasis. The patient had been in the hospital for eighteen months. No tubercle bacilli had been found in the sputum. Some skiagrams of the chest of this patient were shown.

#### An Obscure Affection.

Dr. McWHAE exhibited a patient whose affection was obscure. He complained of lightning pains in the right arm. The Argyll-Robertson pupil phenomenon was present, but there were no other signs of *locomotor ataxia*. The serum had been examined by the Wassermann test and a reaction obtained. Dr. McWhae stated that these cases were often regarded as rheumatic.

#### Nephritis.

Dr. McWHAE also showed a patient suffering from nephritis of the form first described by Rose Bradford—the contracted white kidney. The symptoms were headache, vomiting, the passing of a large quantity of urine of low specific gravity, a high blood pressure and retinitis. The symptoms had appeared two years previously.

#### Severe Œdema.

Dr. McWHAE's third patient had been admitted to hospital eight months previously with severe Œdema. He had weighed 91 kilograms. Treatment of various kinds had been adopted without definite benefit. He had been placed on Epstein's diet, which consisted in a restriction of fat and an ample supply of protein. No change had followed. The pleural cavity had been aspirated, as well as the peritoneum. After a week the amount of urine excreted increased greatly.

#### Foreign Body in the Pelvic Cavity.

Dr. W. TRETOWAN read the notes of a case of foreign body in the pelvic cavity on behalf of Dr. T. C. BORD, of Geraldton.

Dr. Boyd had been consulted on April 28, 1921, by a married lady, aged 28 years, primarily for the purpose of attendance at her confinement. She had been four months pregnant. She had mentioned that she had a swelling on the left side of the abdomen. On examination, Dr. Boyd had found a swelling about the size of a small egg in the region of the left ovary. The tumour was not movable and was slightly tender. As it had caused her little or no disturbance and in view of her condition, Dr. Boyd had advised her to present herself again for examination should the swelling increase in size.

On May 28, 1921, she had presented herself again. It had then been found that there was a large, fluctuating swelling in the left flank. A provisional diagnosis of suppurating ovarian cyst had been made. On the following day Dr. Boyd had cut down upon the swelling and had evacuated a large abscess. He had explored the cavity with his finger and had discovered a hard substance in it. This had proved to be a piece of gum elastic catheter, 27.5 cm. in length. It was fetid and mascerated.

He had subsequently learnt that in November, 1918, the patient, fearing that she was pregnant, had visited a "nurse" in Perth, who had inserted a tube to procure abortion and had told her victim that the tube would come away later on. The abortion had taken place in due course, but the tube had not been passed. After some months she had consulted a doctor, telling him all the circumstances, as she was worried. The doctor, however, could not find any trace of the foreign body. Dr. Boyd had assumed that the catheter had become imbedded between the layers of the broad ligament. The recovery of the patient had been uninterrupted and she had left the hospital twelve days after the operation.

### MEDICO-POLITICAL.

A MEETING of the South Australian Branch was held at the Laboratory of the Adelaide Hospital on September 29, 1921, Dr. BRONTE SMEATON, the President, in the chair.

#### Remuneration of Ships' Surgeons.

Dr. H. S. NEWLAND, C.B.E., D.S.O., moved:

That this Branch adopt the resolution: "That the Federal Committee recommend the Branches to adopt resolutions requiring ships' surgeons to be paid at the rate of £25 per month, with the right of charging fees for attendance on passengers."

Dr. W. A. VESCO seconded the motion, which was carried.

#### Reorganization of the Medical Services.

Dr. H. S. NEWLAND, C.B.E., D.S.O., moved, Dr. W. P. HAYWARD, C.M.G., seconded and it was resolved:

That there be one medical service to provide the medical needs of the Navy, the Army and the Air Force, under one Director-General of Medical Services, responsible to a Minister.

#### Appointment of Representatives on the Federal Committee.

Dr. BRONTE SMEATON, the President, moved:

That the Council's recommendation that Dr. H. S. Newland and Dr. F. S. Hone be appointed delegates of the South Australian Branch to the Federal Committee be confirmed.

He stated that this election was necessary, on account of the resignation of Dr. W. T. Hayward from the Federal Committee. Dr. Hayward had been a delegate since the inception of the Committee and had been its chairman throughout the whole course of its existence, extending over ten years. They recognized Dr. Hayward's motives in resigning were absolutely unselfish and that, in his judgement, they were no doubt sufficient. They were, therefore, compelled to accept the resignation, although it deprived them of a trusted leader. Dr. Hayward's chairmanship of the Federal Committee had been the culmination of a long and honourable connexion with the British Medical Association.

Dr. Hayward had become a member of the Association in England in 1875. In 1879, at a meeting of the medical



profession in South Australia, he had seconded a motion that a Branch of the British Medical Association should be formed in the State. Dr. Hayward, Dr. Way and Dr. Cawley had signed the requisition that the Central Council should be advised to form a Branch.

In 1884 Dr. Hayward was elected a member of the Council and Vice-President of the Branch. He was elected President in 1885-1886 and served on the Council in the following year, again from 1891 to 1893 and from 1895 to 1897. He was appointed Honorary Secretary of the Branch in 1897 and held this office for a few years. He was Honorary Treasurer from 1899 to 1909. On vacating this position he was again chosen Vice-President and in 1910 he occupied the chair for a second time. Since that date he had been a member of the Council.

While in Europe during the period of the war he had represented the Victorian and the South Australian Branches on the Council of the Association in London. At the annual meeting at Aberdeen he was elected a Vice-President of the British Medical Association.

In 1886 he was a member of the Committee that inaugurated the Intercolonial (afterwards Australasian) Medical Congress and he served as Honorary Treasurer of the first and seventh Congresses, held in Adelaide in 1887 and 1905 respectively. Dr. Smeaton said that such a record would surely be an example and an inspiration to others to work for the welfare of their fellow-members and of the Branch.

SIR JOSEPH VEECO moved a vote of thanks to Dr. Hayward for his services.

DR. A. A. LENDON seconded the motion, which was carried unanimously.

#### NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

DAVIS, NORMAN ERNEST, M.B., Mast. Surg., 1921 (Univ. Sydney), "Durham Court," Glebe Road, Glebe Point.

ENGLISH, ROBERT JOSEPH, M.B., 1909 (Univ. Sydney), F.R.C.S., 1918 (Edin.).

MCGRIGOR, HENRY JAMES, M.B., Ch.B., D.P.H., 1898 (Univ. Aber.), Carlton Hotel, Sydney.

WALKER, GLAND REAY, M.B., Ch.M., 1921 (Univ. Sydney), Liverpool Road, Croydon.

#### NOTICES TO MEMBERS.

THE time notified to authors in recent issues relative to the claiming of blocks manufactured at their expense for the illustration of articles published in THE MEDICAL JOURNAL OF AUSTRALIA has expired. In order to give those who may desire to receive their blocks a last opportunity of applying for them, the destruction of unclaimed blocks will be postponed for a further week.

THE date of the clinical meeting of the Victorian Branch of the British Medical Association has been altered from November 2 to November 8, 1921. DR. R. H. MORRISON will read a paper on Cæsarean section.

It has come under the notice of the Editor that members of the Victorian and Queensland Branches frequently receive their copies of THE MEDICAL JOURNAL OF AUSTRALIA on the Monday, Tuesday or Wednesday of the week subsequent to the date of issue. Very definite arrangements are carried out for the mailing of the JOURNAL. Those addressed to Queensland are delivered at the General Post Office, Sydney, on Thursday morning, in time to catch the Brisbane Express. The remainder of the JOURNALS are posted on Thursday afternoon, in time for the Melbourne Express. Members in Melbourne should receive their copies on Saturday morning, while members in Brisbane may have to wait till mid-day on Saturday. If the delivery of

the JOURNAL in Melbourne or Brisbane is unduly delayed, which would signify delivery later than the following Monday, the wrappers should be marked with the hour and date of reception, signed by the addressees and returned to the Office of the JOURNAL, in order that steps may be taken to remedy the defect.

### Medical Societies.

#### MELBOURNE PÆDIATRIC SOCIETY.

A CLINICAL meeting of the Melbourne Pædiatric Society was held at the Children's Hospital on July 13, 1921, the President, DR. H. HUME TURNBULL, in the chair.

##### Extreme Scoliosis.

MR. W. KENT HUGHES demonstrated an extreme degree of scoliosis in a girl, aged 12 years. In drawing attention to the acute lumbar curve, he remarked that the secondary curve was not as pronounced as might be expected. He commented upon the absence of rachitic signs and stated that he had never seen such an extreme lateral curvature unaccompanied by the bony changes of rickets elsewhere. Considerable improvement had taken place in the fifteen months during which the girl had been under treatment.

Mr. Kent Hughes demonstrated the exercises which he had prescribed for her.

##### Pneumonia.

DR. H. HUME TURNBULL presented for discussion the case of a girl, aged 12 years, who had been admitted to the Children's Hospital on May 17, 1921. The illness had begun sixteen days prior to admission with a rigor and pain in the right side and subsequently in the left side of the chest. In the succeeding few days she had been troubled by an irritating cough and nocturnal delirium. The provisional diagnosis on the part of her outside medical attendant was that of pneumonia with delayed resolution or possibly empyema. On examination, the girl was seen to present a dusky cyanosis of the face, with circum-oral pallor. Cyanosis was also apparent in the finger tips, although there was no clubbing of these extremities. Over the cardiac area there was noted a diffuse, pulsation in the second, third, fourth and fifth intercostal spaces and the pulsation extended to a point 3.5 cm. lateral to the nipple line. A diffuse thrill, of maximum intensity at the pulmonary area, extended through the whole cardiac cycle and there was a clearly audible systolic bruit at the pulmonary orifice. Auscultation of the lungs disclosed a small area of tubular breathing at the extreme left base. The spleen was very much enlarged, while the liver extended 2.5 cm. below the costal margin. A degree of nephritis was indicated by the findings on microscopical examination of the urine, *viz.*, red blood cells, very many leucocytes and a number of granular and blood casts. The total leucocytes were 6,800 in each cubic millimetre of blood and the agglutination (Widal) reaction carried out against *Bacillus typhosus* was strongly marked with serum in a dilution of 1 in 50.

Dr. Turnbull exhibited the temperature records, from which it was seen that for some weeks the girl had sustained a "swinging" temperature, regularly rising to 39° C. or 40° C. each evening. Culture of the blood yielded a negative result when taken a few days after the girl's admission. As the fever continued for six weeks without any tendency to defervescence, he had asked Dr. Webster to confirm the Widal reaction and again to carry out hæmo-culture. On the second occasion the agglutination reaction against the typhoid bacillus was obtained with a dilution of serum of 1 in 1,200, while the second blood culture resulted in the recovery of a long-chained, Gram-positive coccus which, from its morphology, might be classified as either a streptococcus or a pneumococcus. The capacity of this organism to ferment inulin and its bile-solubility pointed to its being a pneumococcus. The child's blood serum was again examined for agglutinative properties against two other strains of the typhoid bacillus

which it clumped macroscopically in dilutions of 1 in 500 and 1 in 200 respectively.

Dr. Turnbull said that he considered that the cardiac lesion in this girl was congenital. In view of the earlier pathological findings, he had accepted the diagnosis of typhoid fever, but he found difficulty in reconciling that diagnosis with the subsequent clinical course. When the onset of the illness was recalled, the original diagnosis of pneumonia seemed very reasonable. Was the condition now one of persistent pneumococcal septicaemia? Was it not probable that a subacute bacterial endocarditis had been occasioned by the localization of pneumococci on the malformed valvular cusps? If this view were accepted, the Widal reaction might be explained on the basis of a previous and unrecognized, possibly abortive, attack of typhoid fever.

Dr. REGINALD WEBSTER discussed the possibility of a previous abortive and perhaps unrecognized attack of typhoid fever and the occasional occurrence of agglutinins in the blood of normal individuals.

#### Polyglandular Enlargement with Anæmia.

Dr. TURNBULL's second patient was a boy, aged 8 years, who was admitted to hospital on April 16, 1921. The child had been in inferior health for about four months prior to this date, had lost weight and had become very irritable. The boy's mother had noted a swelling in the left groin. At the time of his admission he was thin and pallid and examination of his body showed various groups of enlarged glands. Those on either side of the neck were distinctly enlarged, discrete and not tender. Enlargement to a greater degree affected the glands of the left supra-clavicular and right axillary regions. The abdomen gave a "doughy" feeling on palpation and irregular areas of increased resistance could be detected. No definite glandular swellings, however, could be felt in the abdomen and at this time the spleen did not appear to be enlarged. The left inguinal glands were very much enlarged and tender and the left spermatic cord was affected by irregular thickening. This feature was accompanied by enlargement of the left testis. Several carious teeth were noted. The von Pirquet cutaneous reaction was not obtained, either with human or bovine tuberculins. From a complete blood examination carried out three days after the boy's admission, it was learned that the red cells numbered 3,800,000 in each cubic millimetre and the white cells 21,000, of which 80% were polymorpho-nuclear leucocytes. He had now been in hospital for thirteen weeks and, during that period, the red cells had declined to 1,875,000 in each cubic millimetre, while the leucocytosis, still of polymorpho-nuclear character, had increased to 38,200. The differential count disclosed a 5% proportion of myelocytes. The clinical course during the three months the child had been under observation had been one of rapid progression, loss of weight and advancing anæmia. A septic type of temperature had been maintained throughout. All the affected glandular groups had increased in size and those of the left side of the neck now formed an enormous swelling. The spleen was now much enlarged and fluid was obviously present in the peritoneal cavity. Dyspnoea and an irritative cough had recently supervened, suggesting affection of the mediastinal lymphatic glands. Two attempts to obtain micro-organisms from the blood had failed, as had also an effort to cultivate organisms from the excised gland tissue. One of the inguinal glands had been excised and sent for examination on April 28. The report received from the laboratory stated that the section was that of a granuloma with much vascularization and endothelial proliferation. The changes appeared to be of a recent nature. There was no fibrosis. Focal necrotic areas were found surrounded by dense polymorpho-nuclear aggregations.

#### Wide-Spread Glandular Enlargement.

Dr. F. KINGSLEY NORRIS described the case of a girl, aged 7 years, in whom the leading clinical feature was wide-spread glandular enlargement. The child's illness dated back to the early months of 1917. She first attended the Children's Hospital at the end of August of that year, when she sought treatment for a swelling behind the left ear. The left tonsil was noted to be somewhat enlarged and a mass composed of enlarged glands, not very tender and without fluctuation, was present in the left upper cervical

region. The child was stated to have been deaf at times, but no history of discharge from the left ear could be elicited. She was one of a large family, all of whom were healthy, with the exception of one child, who was said to have "spinal trouble." The result of the Wassermann test was noted as "feebly partial." Eight months later the child reappeared in the out-patient department, exhibiting multiple discrete glands in the left side of the neck. A searching dental examination failed to reveal any septic process and a similar lack of result attended the examination of a blood film. On June 19, 1918, one of the affected glands was excised. Dr. Reginald Webster reported that it showed a decided increase in the stroma and much endothelial hyperplasia. Histologically, the gland did not appear to be tuberculous, but the appearances were consistent with those of Hodgkin's disease. In January, 1919, a second sample of blood was sent for the Wassermann test and the report again described the result as "feebly partial."

The girl came under Dr. Norris's observation in May, 1919. At that time she was febrile and the leucocyte count was slightly raised (12,000 in each cubic millimetre). The left cervical swelling was still very evident. By December, 1919, the glandular enlargement had involved both triangles of the neck and glands were palpable in both axillae and in the right groin. It was not possible to determine whether the spleen was definitely enlarged. The child had been treated with potassium iodide and grey powder for the greater part of the two years of her attendance at the hospital. In December, 1919, Dr. Norris had administered 0.2 gm. salvarsan, followed after a fortnight's interval by a second dose of the same quantity. By the end of January, 1920, the cervical glands were smaller and softer; no axillary glands could be palpated and enlargement of the spleen could not be detected. There was, however, an enlarged gland of the size of a walnut in the right groin. X-ray treatment was commenced in February, 1920, and at fortnightly intervals the affected glands were given five-minute exposures to full doses of the rays filtered through aluminium. A remarkable degree of improvement resulted, but this was apparently only a remission, as in October last the spleen became definitely enlarged. Since February of this year the girl had been exhibiting various unfavourable features. She had become increasingly pallid and now was distressed on the slightest exertion. The spleen had remained enlarged, in spite of continued X-ray treatment, febrile disturbances were much more frequent and latterly swelling of the abdomen and oedema of the feet had supervened.

#### Recovery After Splenectomy for Advanced Banti's Disease.

Mr. C. W. B. LITTLEJOHN presented a boy, aged 8 years, who had been admitted to a medical ward of the hospital on May 8, 1921, under the care of Dr. H. Hume Turnbull. The mother stated that she had noticed a swelling in the left side of the boy's abdomen for the past ten months, but that during the week prior to his admission the swelling had increased very rapidly. On examination he appeared desperately ill, was jaundiced and in a condition of orthopnoea. His temperature was 38.4° C. and the pulse and respiration rates were 152 and 48 per minute respectively. A very large ascitic collection rendered it difficult to determine the size of the liver and spleen, the umbilicus was everted and the superficial abdominal veins were greatly distended. After the removal by paracentesis of 2.4 litres of ascitic fluid it was apparent that the spleen was very large, although the liver did not seem to be enlarged downwards. The fluid removed at the tapping was yellowish and turbid and, although it contained numerous polymorpho-nuclear leucocytes, no micro-organisms could be demonstrated by smear or culture. Examination of the blood at this time showed that the red corpuscles numbered 5,300,000 per cubic millimetre. The hæmoglobin percentage was 90. The total leucocytes were 10,600 and the leading features of a differential count were 77% of polymorpho-nuclear leucocytes and 12% of myelocytes. The corpuscular fragility was found to be less than normal, in that slight hæmolysis occurred in 0.4% saline, while a normal control showed gross hæmolysis in this concentration of salt solution. The Wassermann test was applied to the blood serum, but yielded no reaction. On May 13 hæmorrhage occurred from the lips and nasal mucous mem-

branes and the outlook appeared extremely ill. During the next fortnight, however, the child improved to such an extent that operation for removal of the spleen seemed feasible and, after much discussion and consideration, this was undertaken on May 29. Transfusion of blood from a brother, who was shown to be a compatible donor, was carried out as a supportive measure preliminary to the splenectomy. In spite of the fact that the wound broke down and there was a leakage of ascitic fluid through the abdominal incision for the two weeks subsequent to operation, the boy made a good convalescence. The wound was now healed, there was very little free fluid in the abdomen, the boy was now walking about and was noted for his excellent appetite.

The spleen was exhibited and Dr. WEBSTER furnished a note on the microscopical examination, to the effect that the histological picture indicated the occurrence of progressive cirrhosis. Isolated Malpighian tufts only retained the normal character of the spleen. Elsewhere the organ was traversed by fibrotic and fibroblastic tissue, in which remnants of lymphoid tissue were apparent. The normal blood sinuses were exaggerated into a prominent reticulum of vessels showing much endothelial activity.

Dr. H. BOYD GRAHAM exhibited graphs compiled from a careful series of complete blood examinations before and after splenectomy, which showed the fluctuations of the red cell count, the leucocytes and percentage of haemoglobin.

Mr. LITTLEJOHN considered that the case merited discussion as an instance of the rare recovery from splenectomy in Banti's disease which had entered upon the third stage.

#### Splenomegaly.

Dr. S. O. COWEN said that he opened the discussion on a series of cases of splenomegaly with much diffidence, owing to the difficulties which beset the subject. At the root of these difficulties lay the fact that knowledge of the normal and pathological functions of the spleen was so fragmentary and inadequate. From the mass of half truths and ill-supported hypotheses relating to the physiology of the spleen, however, certain facts emerged. The spleen had a hæmopoietic function, producing red cells, normally during embryonic life and pathologically under the stress of certain conditions in adult life. Further, it was probably a source of lymphocytes, though not an important one. It had a phagocytic function, directed especially toward red blood cells and their disintegration products. It also played a part in resistance to infective diseases, splenectomy diminishing that resistance until such time as compensatory processes could again restore it to its original strength. None of these functions was performed solely by the spleen. They were shared by other parts of the reticulo-endothelial system, to which, in large measure, the tissue of this organ belonged. For this reason splenectomy was not fatal and its effect on the organism difficult to estimate. The morbid anatomy of the spleen in the different diseases in which enlargement of the organ occurred had not been altogether satisfactorily established. For the time being, therefore, it was necessary to take the retrograde step of classifying the various forms of splenomegaly, not according to their functional or even structural pathology, but in respect of their main clinical features. A simple classification which Dr. Cowen had found of practical value was as follows:

(i.) *Splenomegaly in Infective Diseases.*—The enlargement might be acute, as in typhoid fever, ulcerative and subacute bacterial endocarditis and septicæmia from various causes; or chronic, as in syphilis and general tuberculosis. In malaria, the acute enlargement of the earlier period often persisted in chronic form. There were numerous other examples of this group, but those mentioned were among the more important. Dr. Turnbull's patient afforded an illustration of this type, somewhat complicated by the evidence of both a pneumococcal and a typhoid infection, old or recent. It might be that a pneumococcal infection had occurred in the congenitally defective pulmonary valve—a subacute bacterial endocarditis, with enlargement of the spleen from multiple small emboli; but there was no evidence of embolism in the skin or elsewhere. Splenomegaly occurred not infrequently in pneumonia and might well be found in a chronic pneumococcal septicæmia with localization elsewhere than in the valves of the heart. The Widal reaction might have been due

to a former attack of typhoid fever of mild character, as the child showed little evidence of that disease now. Persistent splenomegaly appeared to be uncommon after enteric fever, though he had seen one example of it in a patient suffering from chronic cholangitis due to the *Bacillus typhosus*.

(ii.) *Splenomegaly in Diseases of the Blood and Blood-Forming Organs.*—This form comprised the second group. The leuchæmias, pernicious anæmia and Hodgkin's disease were among the more important conditions in this category. Two interesting examples of Hodgkin's disease had been placed before them, different in some respects, but fundamentally of the same type, in that both presented persistent glandular enlargement, with the microscopic picture of a granuloma. The more chronic case was noteworthy on account of the predominant splenic involvement, though at an earlier stage the glands were more affected. Such a picture sometimes occurred earlier in the disease, the nature of which would be made manifest only by the finding of some small glandular enlargement with the characteristic histologic features and by the blood examination. The latter served to exclude the leuchæmia, but was seldom distinctive until the process was somewhat advanced, when an increase of the white cells occurred, with a well-marked polymorpho-nuclear leucocytosis, as in Dr. Turnbull's second case. He (Dr. Cowen) interpreted the myelocytosis in this case as being an expression of the intensity of the stimulus to the bone marrow accompanying the progressive anæmia. Dr. Norris's case showed that X-ray treatment would sometimes prevent the development of this leucocytosis. He would ask Dr. Webster, who had recently made some interesting observations on the bacteriology of Hodgkin's disease, to discuss that aspect of the question.

(iii.) *The Splenic Enlargement, Though Not Strictly Primary, was the Predominant Feature.*—Splenic anæmia, with its great enlargement of the spleen, secondary type of anæmia, leucopenia and normal or diminished fragility of the red corpuscles, was perhaps the best example of this group. Dr. Littlejohn's case appeared to be an instance of the later stages of this disease, when cirrhosis of the liver, jaundice and ascites generally developed. Gaucher's disease presented similar clinical features, but the pathological picture was quite distinct. In the splenomegaly associated with acholuric jaundice, on the other hand, there was no leucopenia. Jaundice developed earlier and the corpuscular fragility was much increased.

Dr. Cowen was of the opinion that such a classification, though admittedly imperfect and unscientific, was of some clinical value, inasmuch as it afforded indications for treatment, splenectomy being contra-indicated in the first group, with the exception of the chronic malarial spleen, and of doubtful value in the second, while it was the important feature of the treatment of the diseases of the third group.

#### The Pathology of Hodgkin's Disease.

Dr. REGINALD WEBSTER contributed some observations on the nature of the pathological changes in Hodgkin's disease. He urged that the term "lymphadenoma" be abandoned. The weight of present-day opinion favoured the conception of the process as essentially a granuloma and during the last few months at the Children's Hospital there had been a very interesting sequence of cases, from which he had obtained a number of histological preparations. From these it appeared that the minute morbid anatomy varied with the stage and clinical course of the disease, but it was possible to trace the evolution of a distinct entity when a series of slides embracing early and advanced acute and chronic types were studied. He briefly reviewed the attempts to implicate a specific micro-organism as the causal agent in Hodgkin's disease, the claims advanced by Bunting and Yates in favour of the diphtheroid, "*Bacterium hodgkini*," and proceeded with an account of some recent experiments on his own part in which he had failed to establish an infective polyadenitis in monkeys by repeated inoculations with a diphtheroid organism recovered by blood culture in a child with rapidly progressive Hodgkin's disease. Diphtheroids were ubiquitous and the case for the diphtheroid bacillus in relation to Hodgkin's disease must be regarded as not proven.

Dr. Webster added some remarks on the diagnostic utility of examination of the blood in Hodgkin's disease.



It was undoubtedly useful and necessary for the exclusion of diseases with a distinctive blood picture, such as leucæmia, but it was difficult to obtain positive evidence of Hodgkin's disease by the usual blood examination. He considered that this statement was especially true in the earlier stages, when he would hesitate to separate Hodgkin's disease from tuberculosis on the data afforded by blood examination.

#### The Surgery of the Spleen.

Dr. WM. DISMORE UPJOHN discussed points in the operative technique of splenectomy. The incision employed varied with individual surgeons, but it should always allow of easy access to the pedicle of the spleen and provide a good approach to the upper pole of the organ. It was here that difficulty from adhesions was most likely to be encountered. It was wise to look for spleniculi during the performance of splenectomy for splenic anæmia, as these small accessories had been known to enlarge subsequently and be associated with anæmia. He quoted a specific instance in which such had been the sequence of events. He concluded with some remarks on the pedicle of the spleen and the variable manner in which the splenic artery subdivided. It might happen that the main trunk of this vessel was extremely short and that it broke up into smaller branches some distance from the spleen, thus rendering ligation of the pedicle a more tedious process than when the main trunk was of good length.

Mr. C. W. B. LITTLEJOHN, commenting on the case which he had demonstrated, stated that the boy must be regarded as suffering from Banti's disease in the third stage, although the duration of the jaundice, which had been stated to appear at intervals for six years, was unusual. Another peculiar feature was the high red cell count and hæmoglobin content, 5,300,000 per cubic millimetre and 90% respectively, which obtained at the time of the boy's admission in such a desperately ill condition. Was it possible that the rapid respiration rate and orthopnoea contributed to the establishment of a polycythæmia? The post-operative leucocytosis was probably dependent upon the transfusion to some extent at least, as he had frequently noted this effect of transfusion. The fact that Banti's disease could be cured by removal of the spleen in the first and second stages indicated that the essential cause of the condition was located in the spleen. He recalled a time at Oxford when Dr. Gibson, examining sections of the spleen in Banti's disease, found a streptothrix organism in six consecutive instances. But he was not aware that any further evidence had been adduced in favour of the causal relationship of this organism to the condition under discussion. Once Banti's disease had entered upon the third stage, with jaundice and ascites due to hepatic cirrhosis, the longest expectation of life was usually placed at two years.

Dr. H. DOUGLAS STEPHENS, speaking with reference to the diphtheroid organism discussed by Dr. Webster in relation to Hodgkin's disease, stated that he recalled to mind the history of a boy under the care of Dr. A. Jeffreys Wood, in whom diphtheria occurred in the presence of clinical Hodgkin's disease. The enlargement of the glands disappeared for three months, but later recurred and was not affected by large doses of antitoxin.

He agreed with Dr. Upjohn that a good view of the area of operation was essential when the surgeon was dealing with adhesions at the upper pole of the spleen and ligating the upper portion of the pedicle. In a recent case splenectomy had been followed by left basal pleurisy and he had experienced the same sequelæ on two former occasions. He was rather at a loss to account for the post-operative pleurisy, but did not think it could be ascribed to the trauma of the operation.

Dr. F. KINGSLEY NORRIS considered that the enlargement of the spleen in Hodgkin's disease should not be looked upon as due to secondary deposit, but as a manifestation of the lymphatic response throughout the body. In regard to treatment, arsenic had for years been the mainstay. The girl whose case he had presented, had received four injections of 0.2 gramme of arseno-billon into the buttock muscles. If he remembered correctly, Gulland and Goodall stated that the arsenical injections, when given intramuscularly, were without effect and that they should be given into a vein. X-ray treatment was to a certain ex-

tent specific, but, in the long run, of temporary benefit only. Further, not all cases of Hodgkin's disease improved in response to X-rays with equal alacrity.

Dr. Norris quoted authority in emphasizing the importance of exposing to the X-ray not only the obviously enlarged glands, but all the big lymphatic areas of the body. Radium emanations were said to be more effective than X-rays, but on this point he had had no personal experience. It appeared to be becoming generally recognized that Hodgkin's disease was due to some definite, if unknown, organism. Even Bunting and Yates seemed to be looking with suspicion on their original diphtheroid bacillus, although Billings and Rosenow had reported great improvement after treatment with a vaccine prepared from the bacillus cultivated from a typical gland. Until they had some specific therapy, based on more certain ætiological evidence, they must look upon any apparent amelioration in these cases with great reserve.

Dr. H. HUME TURNBULL remarked on the leucocytosis present in Mr. Littlejohn's patient at the time of his admission. This feature constituted an obstacle to the diagnosis of splenic anæmia, but it was considered at the time to be connected with a degree of peritonitis underlying the ascitic effusion. It was interesting to note that the leucocytes subsequently fell to 4,000 in each cubic millimetre. He was reminded of a series of cases described by Dr. Parkes Weber before the Royal Society of Medicine, in which splenomegaly was associated with a slightly increased corpuscular fragility and absence of leucopenia. In that series evidence of syphilis was adduced, but in the boy shown by Dr. Littlejohn no such indications had been obtained.

## Public Health.

### THE PLAGUE OUTBREAK.

BULLETIN No. 10, issued by the Federal Department of Health on October 25, 1921, contains the summary of the position up to October 22, 1921. Since the commencement of the epidemic, 31 definite infections and one probable infection have been notified to the State authorities. The distribution is as follows: Brisbane, eight cases, with four deaths (including the Toowoomba case); Townsville, 12 cases, with eight deaths; Cairns, 11 cases, with six deaths; and Port Douglas, one suspected case.

Between August 23 and October 15, 1921, the number of infected rodents destroyed was as follows: Brisbane, 72; Townsville, 45; Cairns, 3; Rockhampton, 3; Ipswich, 2; and Maryborough, 1.

Since the issue of the last Bulletin, a Brisbane woman, aged 42, who had been ill since October 18, 1921, was found to be suffering from plague on October 20. One patient, whose infection was notified previously, died at the Wattlebrae Isolation Hospital on October 22.

During the three days, October 20, 21, 22, 1921, 1,006 rats and 252 mice were caught and examined in the Brisbane area. Of these, seven rats and one mouse were found to be infected.

A boy, aged nine years, was isolated in the Toowoomba Hospital on October 19 on account of plague. The notification was recorded in Bulletin No. 9. It appears that this lad lived in South Brisbane and arrived at Allora on October 14, 1921. It is assumed that the infection occurred in Brisbane.

The Commissioner of Health for Queensland reported that the bacteriological examination of smears from rats caught in Cairns disclosed three infections and that of eight spleen smears from rats caught in a mill at Hinchinbrook two contained *Bacillus pestis*.

From New South Wales information has been received concerning the destruction and examination of rodents on October 21 and 22. At the Department of Public Health 200 rats and 11 mice were examined. The Sydney Municipal Council was responsible for the destruction of 237 rats. All these rodents were found to be free from infection.

During the fortnight ended October 15, 1921, a small number of rats was obtained on vessels at Port Adelaide, either after fumigation or as a result of trapping or poisoning. None of these rats was infected. Similarly, on

October 18 and 19, 86 rats were examined at Perth, but all were found to be healthy.

Appended to this issue of the Bulletin is a table setting forth the details concerning all the human infections.

BULLETIN No. 11 was issued on October 29, 1921. Under the heading "General," the method of inspection of goods passing from Queensland to other States by rail is described. The inspection is placed in the charge of a supervisor of the Commonwealth Health Department and one of the State Department. All goods must be packed in rat-proof containers or be obviously rat-free. Rat-broached, rat-infested or recently rat-marked parcels are rejected, as is produce from premises in which infected rats have been found. The supervisors are given daily lists of infected premises. Goods of produce merchants on whose premises infected rats have been found, are accepted for transport if accompanied by a statutory declaration that the goods have not been in the infected premises nor in contact with any goods therefrom. It is stated that practically no goods demanding rejection are being received at the railway depôt.

Members of the quarantine stations staffs are being required to take wharf duty in rotation, in order to familiarize them with the routine. Special instructions have been issued in regard to overseas vessels calling at Queensland ports and leaving on the same day.

The position at Brisbane is followed in the Bulletin day by day and a summary for the week ended October 22, 1921, is appended. On October 24 two further cases in human beings were notified. On the 23rd a Chinese died of plague. Between October 24 and 26 15 infected rodents and one infected cat were found in Brisbane.

On October 24, 1921, four further cases in man were reported in Townsville. Two of them were fatal. On the following day two suspected cases were reported. On October 26 Dr. Elliott, of Cooktown, reported that the boatswain of the *Kuranda* was ill with suspected plague. It was assumed that the infection was contracted at Townsville. The ship proceeded to Cairns, where she was placed in quarantine.

On the same day another man died in Townsville of plague and a further case of suspected plague was notified. A girl, aged eight years, whose infection was notified on October 24, died on October 26. On October 27 two further cases of plague were recorded. It was discovered that one of the suspected cases was not plague.

No further infected rats had been found, according to the latest advices, in Sydney, Newcastle or Western Australia.

#### INTERNATIONAL AND OTHER CONGRESSES.

AN International Congress for the Protection of Maternity has been inaugurated by the *Ligue contre la Mortalité Infantile*. The first conference will be held in Paris on July 6, 7 and 8, 1922.

We learn that the Tenth International Otological Congress will be held in Paris in July, 1922.

The Fifth National Medical Congress of Cuba will be held in December, 1921.

The Dresden Hygiene Museum, which originally formed the popular section of the International Hygiene Exhibition, 1911, the National Board for Testing Artificial Limbs of Germany and the Kaiser Wilhelm Academy are providing a travelling exhibition for use in Holland, Germany and other countries. The exhibits are accompanied by experts in the various departments of hygiene, who deliver one hour talks daily at the various places visited.

### Correspondence.

#### SURGICAL TREATMENT OF ENTERIC FEVER.

SIR: Enteric fever still continues to take its annual toll of the public, more particularly of those whom duty calls on to attend to such cases, e.g., nurses, doctors, etc..

It is true that in recent years the incidence and mortality have been reduced by improved sanitary measures, with skilled medical and nursing treatment, and to this in camps and hospitals has been added prophylactic vaccination, so effectually used during the war.

I have been, through force of circumstances, deprived of access to current medical literature, so the suggestions that follow in these remarks may not be new. All I can say is that they are the result of observations in an extensive hospital and private practice and of serious thought during a prolonged invalidism.

I would like to enter a plea for the early co-operation of the surgeon with the attending physician in all cases of enteric fever. I can here again hear the protest of my physician friends against these "poachers on their preserves" and in the vernacular of our young people can almost hear them called "sticky beaks."

Hitherto the surgeon's share in enteric cases has been to search for a perforated ulcer amidst a mass of acutely inflamed intestines, to suture it and to drain the resulting peritonitis. As is well known, the result, if successful, is quoted as a surgical curiosity.

The treatment of appendicitis, owing to the dire effects of delay, i.e., abscess formation, general peritonitis, etc., has been anticipatory and surgical. Why, then, in enteric cases should the surgeon be called upon to lead a "forlorn hope" and operate only in the face of acute general peritonitis? Would it be rational or even justifiable to open the abdomen and drain the ileo-caecal area in anticipation of general peritonitis from such an ulcer or even to do a caecostomy or appendicostomy to drain or possibly apply treatment locally to the most serious affected area of ulceration?

Yours, etc.,  
"RETIRED SURGEON."

October 26, 1921.

#### THE PREVENTION OF DIPHTHERIA.

SIR: It is with pleasure that one reads your editorials on the prevention of disease. Though some of the ways put forth to lessen disease may be debatable, still, you draw the attention of the profession to the facts that, in spite of much public health administration in the Commonwealth, many preventible diseases are increasing in prevalence.

The leading article on October 8 last on the prevention of diphtheria concludes by suggesting that an educational experiment in a town of moderate size should be undertaken by the Federal Department of Health. It will therefore be of interest to set forth what already the Health Commission of Victoria has done in this direction.

In Tallangatta, an isolated township of Victoria, diphtheria has for years been unduly prevalent. Dr. Featonby was sent there in April of this year, with the necessary laboratory assistance and equipment to take swabs from the whole population. In all, 530 swabs were taken and ten carriers of diphtheria were discovered. These were isolated and treated. In this year, prior to April, 49 cases of diphtheria had occurred at Tallangatta. Since the visit of Dr. Featonby, three cases only have been reported. Of these, one was certainly an imported case from another district. As the summit of cases was reached in this State in May, it is reasonable to assume that many more cases would have been notified to date than the very small number of three, if no measures had been taken to ascertain and treat the carriers.

Following up this experiment, the Health Commission two months ago decided to take the same action in Bendigo during February of next year. February was chosen, as in that month diphtheria is at its minimum prevalence and it is likely that the cost of isolation and treatment of carriers will be then least. This scheme has met with the approval of the local municipalities. The Central Health Department will supply medical assistance and the laboratory equipment and personnel. The taking of swabs will be done by the local medical officers of health.

The practical difficulties will be greater in the larger community. The Health Commission, however, feels, as

you do, that, could it be demonstrated that diphtheria can be lessened, provided the requisite effort is made in localities both large and small, later on the whole community might be convinced that it is worth while to make a serious attempt to eradicate a disease which is now a great drain on the life and health and finances of the Commonwealth.

Yours, etc.,

WALTER SUMMONS, M.D., D.P.H.,

Member of the Health Commission of Victoria, etc.  
Melbourne, October 28, 1921.

### Books Received.

THE OFFICIAL HISTORY OF AUSTRALIA IN THE WAR OF 1914-1918: VOLUME I. THE STORY OF ANZAC FROM THE OUTBREAK OF WAR TO THE END OF THE FIRST PHASE OF THE GALLIPOLI CAMPAIGN, MAY 4, 1915, by C. E. W. Bean; 1921. Sydney: Angus & Robertson, Limited; Demy 8vo., pp. 660, with 111 maps and 56 illustrations. Price: 21s. net.

A POCKET SURGERY, by Duncan C. L. Fitzwilliams, C.M.G., M.D., Ch.M., F.R.C.S. (Edin. and Eng.); 1921. London: Edward Arnold & Co.; Crown 8vo., pp. 348. Price: 10s. 6d. net.

MEDICAL EXAMINATION FOR LIFE INSURANCE, by Thomas D. Lister, C.B.E., M.D., F.R.C.S., M.R.C.P.; 1921. London: Edward Arnold & Co.; Demy 8vo., pp. 168, with diagram. Price: 10s. 6d. net.

### Medical Appointments.

DR. O. A. A. DIETHELM (B.M.A.) has been appointed Visiting Surgeon to the Gaol at Grafton, also Medical Officer-in-Charge of the Lock Hospital at Grafton Gaol, New South Wales.

THE undermentioned have been appointed Inspectors under Section 50 of the *Cattle Slaughtering and Diseased Animals and Meat Acts, 1902* (New South Wales) at the respective districts: DR. A. J. MACKENZIE (B.M.A.), Glen Innes; DR. W. R. DARTON (B.M.A.), Kandos; DR. C. V. SINGLE (B.M.A.), Moree.

DR. A. CURTIS (B.M.A.) has been appointed Superintendent of the Hospital for the Insane and of the Receiving House, Ballarat (acting), from October 12, 1921, during the absence of DR. PATRICK SHAW (B.M.A.) on leave.

DR. L. O. SLEEMAN (B.M.A.) has been appointed a member of the Council of the Wonthaggi Technical School.

DR. G. BROWN (B.M.A.) has been appointed a Member of the State Children's Council at Adelaide.

THE undermentioned have been appointed Health Officers under the *Health Acts, 1900 to 1917* (Queensland) at the respective districts: DR. R. A. G. MALCOLM (B.M.A.), at Blackall; DR. J. A. FORREST, at Charters Towers; DR. H. P. ELLIOT (B.M.A.), at Cooktown; DR. W. H. JAMISON (B.M.A.), at Dalby; DR. J. P. RYAN (B.M.A.), at Gympie; DR. J. ROSS (B.M.A.), at Herberton; DR. R. FRESHNEY (B.M.A.), at Toowoomba.

DR. R. W. TELFORD has been appointed Deputy Commissioner of Public Health in Queensland under the *Health Acts, 1900 to 1917*.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii.

ROYAL NORTH SHORE HOSPITAL OF SYDNEY: Medical Superintendent.

### Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Societies' Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marwickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Manchester Unity Independent Order of Oddfellows Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B. M. A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 3, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, 6, Bank of New South Wales Chambers, St. George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

### Diary for the Month.

- Nov. 8.—Victorian Branch, B.M.A.: Final Day of Nomination for Election to the Council.  
Nov. 8.—Tasmanian Branch, B.M.A..  
Nov. 8.—New South Wales Branch, B.M.A.: Ethics Committee.  
Nov. 9.—Melbourne Paediatric Society (Victoria).  
Nov. 10.—Victorian Branch, B.M.A.: Council.  
Nov. 11.—New South Wales Branch, B.M.A.: Clinical.  
Nov. 11.—Queensland Branch, B.M.A.: Council.  
Nov. 11.—South Australian Branch, B.M.A.: Council.  
Nov. 15.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
Nov. 15.—Illawarra Suburbs Medical Association (N.S.W.).  
Nov. 16.—Western Australian Branch, B.M.A..  
Nov. 18.—Eastern Suburbs Medical Association (Sydney).  
Nov. 18.—North-Eastern Medical Association (N.S.W.).  
Nov. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.  
Nov. 24.—South Australian Branch, B.M.A..  
Nov. 25.—New South Wales Branch, B.M.A..  
Nov. 25.—Queensland Branch, B.M.A.: Council.

### Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)